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(With which "The Australasian Medical Gazette," and "The Australian Medical Journal" are incorporated.)

The Journal of the Australian Branches of the British Medical Association.

VOL. I.—3RD YEAR—NO. 10. SYDNEY: SATURDAY, MARCH 4, 1916. PRICE 6D.

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THE MEDICAL JOURNAL OF AUSTRALIA.

VOL. I.—3RD YEAR. SYDNEY: MARCH 4, 1916, No. 10.

SEPTIC PNEUMONIA.[1]

By **W. F. Litchfield, M.B. (Sydney),**

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Osler's classification of pneumonia is as follows: Lobar pneumonia and broncho-pneumonia.—Broncho-pneumonia is further divided into primary broncho-pneumonia and secondary broncho-pneumonia. Secondary broncho-pneumonia is further divided into pneumonia secondary to capillary bronchitis and aspiration pneumonia, due to the aspiration of septic matter and particles of food in cases of paralysis and coma.

It is of the last variety that I wish to speak. It appears to me that septic pneumonia has not received the consideration it deserves, and has never been properly formulated as a clinical entity.

My conclusions will be based on observations of septic or aspiration pneumonia in diphtheria, in diseases of the brain, associated with coma, and in cases after general anæsthesia.

In my book on *Diphtheria in Practice*, I analysed the *post-mortem* findings in 59 cases of laryngo-pharyngeal diphtheria. In twenty-seven cases death was due to pure asphyxia, from blocking of the air passages, due to the extension of membrane into the smaller bronchi. In nine cases there was blocking of the air passages, combined with pneumonic patches in the lungs. In fifteen cases death was due to extensive pneumonic consolidation, without any membranous formation in the bronchi. It is to the latter cases I wish to refer now. The general condition noted *post-mortem* was as follows: There was membrane more or less detached in the pharynx, larynx and upper part of the trachea. In no case was there any blocking of the air tubes by membrane. There was extensive consolidation in both lungs. The pneumonic areas were patchy, but often massive. There might be massive consolidation in one lobe, with smaller areas in the other lobes. Usually there was a purulent bronchitis. In some cases the appearance resembled that of lobar pneumonia. In several cases the pleural surfaces were coated with lymph, and in one case there was pus in the pleural cavity. Under the microscope, the chief feature was a leucocytic infiltration of the air vesicles. In some cases fibrin entered largely into the exudations. The interstitial tissue was inflamed and vascular. The micro-organisms found in the lungs were chiefly staphylococci and diplococci. In a few cases the diphtheria bacillus was found as well.

The progress of the disease in all cases was rapid. In ten of the fifteen cases, death occurred on or before the fourth day after admission, the other patients died on the fifth, sixth, tenth, eleventh and eighteenth days respectively.

In none of the cases was there any deglutitional paralysis. It was noticed in several of the cases that the membrane overhanging the larynx was in a dirty, broken-up condition. This supported the view that the pneumonia was a septic process due to the inhalation of septic particles. The distribution of the pneumonic patches and the bacteriological findings also lent support to that view.

My next observation relates to broncho-pneumonia in acute diseases of the brain. Looking through the notes of 200 *post-mortem* examinations made by myself at the Royal Prince Alfred Hospital, I find that there were 25 cases of acute brain disease. Of these, eight showed well marked broncho-pneumonia, in association with purulent bronchitis. The following are brief notes of the cases:—

1. Male, aged 38 years, admitted on August 5, 1911, and died on August 8, 1911. He was unconscious all through. Post-mortem examination: Tubercular meningitis; the left lung weighed 21 ozs, lower lobe congested; the right lung weighed 23 ozs., all lobes showed red consolidation, with grey firmer areas from the size of a sixpence to that of a shilling scattered throughout. Microscopically the appearance was that of croupous pneumonia.

2. Male, aged 68 years, admitted on January 5, 1912, and died on January 15, 1912. He was semi-unconscious throughout. Post mortem examination: Glyoma of the left frontal lobe, with glyomatous infiltration, involving both lenticular nuclei. The left lung weighed 27 ozs., and was œdematous and congested, with patches of consolidation throughout. The right lung weighed 38 ozs., and exhibited a similar condition. The microscope showed congestion of the tissues and the alveoli full of cells.

3. Male, aged 70 years, admitted on June 12, 1913, and died on June 21, 1913. He was comatose throughout. Post-mortem examination: Hæmorrhage into the left frontal lobe, and evidence of old pachymeningitis. Both lungs showed purulent bronchitis and patches of broncho-pneumonia.

4. Male, aged 8 years, admitted on July 27, 1913, and died on August 1, 1913. There was cerebral irritation, increasing to coma. Post-mortem examination: There were tubercular meningitis and miliary tubercles in the spleen; both lower lobes of the lungs showed patches varying from the size of a threepenny bit to that of a shilling of grey consolidation, surrounded by red areas. The microscope revealed a congestion of the blood vessels and the alveoli full of pus cells without fibrin.

5. Female, aged 34 years, admitted on September 24, 1913, and died on September 26, 1913. She was semi-comatose throughout. Post-mortem examination: Pneumococcal meningitis. Both lungs showed purulent bronchitis and broncho-pneumonia. Microscopically, the appearance was that of croupous pneumonia.

6. Female, aged 65, admitted on September 19, 1913, and died on September 29, 1913. Coma and

[1] Read at a meeting of the New South Wales Branch of the British Medical Association on November 26, 1915.

paralysis were noted. Post-mortem examination: There was softening of the left cerebral hemisphere from thrombosis of the middle cerebral artery. Both lungs showed purulent bronchitis and broncho-pneumonia.

7. Male, aged 60, admitted on May 22, 1914, and died on June 2, 1914. There was semi-coma and right facial paralysis. Post-mortem examination: Softening of the mid-region of the right cerebral cortex was present Both lungs showed purulent bronchitis and broncho-pneumonia.

8. Male, aged 63, admitted on September 16, 1910, and died on September 18, 1910. He was suffering from chronic alcoholism and a septic gingivitis; he was in a stuporous condition. Post-mortem examination: Fibrosed kidneys and a fatty liver were present. The lungs showed purulent bronchitis and broncho-pneumonia.

It will be noticed, as in the cases following diphtheria, that the onset in all these cases followed soon on the original illness, and that the course was rapid.

My next observations relate to pneumonia occurring immediately after operations with general anæsthesia. From my own records and the records of other post-mortem examinations carried out at the hospital during 1914 and 1915, I have collected a number of such cases, and shall deal briefly with some of them.

1. Male, aged 65 years, admitted June 27, 1915, and died July 9, 1915. An exploratory incision under anæsthesia was made in the upper abdomen. Post-mortem examination: There was a large, malignant ulcer, involving the pylorus and lesser curvature of the stomach, and evidence of a recent gastro-jejunostomy was noted. Both lungs showed purulent bronchitis and broncho-pneumonia.

2. Male, aged 65 years. On January 25, 1909, a cancer of the lower lip was removed, and the triangles of the neck cleaned out. On the next day he developed a temperature of 101° F.; the fever continued, and he died on January 29, 1909. Post-mortem examination: There was purulent bronchitis. The left lung was congested; a portion of the upper lobe of the right lung was solid, and the greater portion of the lower lobe was also solid.

3. Female, aged 41 years, on February 23, 1914, partial thyroidectomy was performed; death occurred next day. Post-mortem examination: There was a patch of red consolidation of the lower lobe of the right lung, which, under the microscope presented the features of croupous pneumonia.

4. Male, aged 58. Operated on for malignant disease of the larynx. Death occurred three days later, following symptoms of pneumonia. Post-mortem examination: There was early croupous pneumonia, involving both lungs.

5. Male, aged 27 years. Partial thyroidectomy was performed on January 4, 1915. Death occurred next day. Post-mortem examination: Both lungs showed purulent bronchitis and broncho-pneumonia.

6. Male, aged 63 years. On November 18, 1914, the patient was operated on for strangulated femoral hernia. Death occurred on November 21, 1914. Post-mortem examination: The lower lobe of the right lung was solid and oozing pus, the left lower lobe was solid and red.

7. Male, aged 51 years; was operated on for gall stones on February 12, 1915. Death occurred on the 16th. Post-mortem examination: Purulent bronchitis and broncho-pneumonia were present.

8. Female, aged 38 years. On September 1, 1914, she was operated on for hydro-salpinx. After the operation she developed symptoms of broncho-pneumonia. Death occurred on September 17, 1914. Post-mortem examination: Both lungs showed areas of red and grey hepatization.

These cases show that not infrequently after operation under a general anæsthetic a scattered pneumonia generally associated with a purulent bronchitis, occurs. Dr. Stacey, of this society, has more than once called attention to the fact that the *post-mortem* records of the Sydney Hospital contain numerous cases of broncho-pneumonia following operations, especially those about the head and neck. Like the other cases mentioned, the cases of pneumonia following operations show a rapid onset, and run a rapid course.

It would be easy to extend the above series of cases, each of which has been taken from a limited field of observation, but they are sufficient to show the importance of the subject.

All the cases, namely, those occurring in diphtheria, in the course of insensibility of cerebral origin, and those occurring after general anæsthesia, have this in common, that there is a diminished sensibility of the throat and larynx, and a depression of the coughing reflex. Further, in many of the cases the muscular apparatus of the respiration is embarassed. Further, in the majority of the cases the mouth is open, and the respiration oral, with the result that the mouth and throat become dry, and the secretion inspissated. All of these factors open the way of the air passages to the inhalation of foreign and disease-producing particles. The danger is enhanced when there is a septic or inflammatory condition of the mouth and throat.

That the inflammation of the lungs described in the cases recorded is due to the inhalation of septic particles seems beyond doubt. That the condition is a frequent one and the actual cause of death is also evident.

Septic pneumonia may occur, though less commonly, apart from the conditions mentioned above. A septic state of the mouth and upper air passages always carries with it the possibility of a septic pneumonia. The condition is a serious one, firstly, because the infection is apt to be widespread throughout the lungs, and secondly because the patient as a rule is already debilitated by previous illness. Some patients no doubt recover. The indications for treatment are to cleanse the throat and mouth to prevent a continuance of the infection, open-air treatment, free stimulation, and sinapisms applied to the chest wall. Oxygen inhalations may help, and belladonna, or atropine in full doses acts as a respiratory stimulant in pneumonia associated with bronchitis.

The chief interest in the subject, however, belongs to prophylaxis. There are many reasons why the

mouth should be kept free from active sepsis, such as is associated with carious teeth and *pyorrhoea alveolaris*, and not the least important is that during illness, especially an illness associated with soporific or paralytic conditions, the danger of septic pneumonia supervening is greatly increased thereby.

During any acute illness the mouth and throat should be cleansed frequently and thoroughly. If there be a septic state of the mouth the treatment should be the more assiduous, and if the illness be in one of the categories mentioned above, the ever-present danger of septic pneumonia should be remembered. Whatever mouth wash is used the cleansing should be thorough. It may be necessary to syringe out the pharynx or the nasal passages several times a day. Under ordinary circumstances the usual alkaline and antiseptic washes should suffice, but in cases of active sepsis I have found nothing better than chlorine, in the form of *Liq. sodae chlorinatae*, diluted about one in eight with water. The new antiseptic hypochorous acid, so strongly recommended recently (*British Medical Journal*, July 24, 1915) should also be very suitable for a mouth wash, and a throat swab in septic conditions. Every endeavour should be made in these cases to keep the mouth, tongue and throat from getting dry, for in such conditions the secretions become inspissated, and are easily inhaled. For this purpose frequent sips of water, and the encouragement of nasal breathing, as opposed to the oral breathing so likely to occur from dropping of the lower jaw, should be employed. Lastly, surgeons should always keep in mind the possibility, after a prolonged anæsthesia, especially if it be for an operation involving the upper air passages, of a septic pneumonia. In too many cases a successful operation has been followed by the death of the patient from septic pneumonia. Where possible, before an operation the mouth should be put into as clean a state as possible by attending to bad teeth and any other trouble about the mouth and throat. Where time is a consideration, some attempt should be made to cleanse the mouth. A preliminary tracheotomy in jaw cases probably helps to prevent broncho-pneumonia. The question of local or spinal anæsthesia should also be carefully considered in the instance of a dirty mouth. The advantages of a light anæsthesia are obvious, as tending to preserve the coughing reflex to some extent. After the operation, too, the mouth should be attended to. In the shock following operation there is often a soporific condition, with dropped jaw and dry mouth, which predisposes to the inhalation of septic particles.

I am indebted to Professor Welsh for permission to refer to the *post-mortem* records of the Royal Prince Alfred Hospital.

CALCIUM AND EPILEPSY: A PRELIMINARY REPORT.

By Guy P. U. Prior, M.R.C.S., L.R.C.P.,
Acting Medical Superintendent,
and
S. Evan Jones, M.B.,
Medical Officer, The Mental Hospital, Rydalmere.

In 1912 we treated with calcium and bromide an epileptic patient, C.W.,[1] with rather striking results. This patient was then 21 years of age. When teething he had had convulsions, and from the age of two to eleven had about one fit every twelve months. It was stated that he then improved with "Trench's remedy," but that since the age of fifteen the fits had become gradually more frequent, and that for three months before admission into the Mental Hospital, where he came under our notice, the attacks had been as many as 18 in 24 hours. For the first six months after admission he averaged 77 fits per month. He was then given a mixture of bromide and calcium, with the result that for the next nine months his fits were reduced to less than one a month. In July, 1914, he was able to leave the hospital. He is reported now to have about one fit in three months. C.W. was only treated with calcium and bromides for one month; he had previously had bromides in varying doses and combinations. After this month's treatment the nature of his fit altered; previously he would lose consciousness, would run round in a circle from left to right, micturate and then lie down; he had no convulsions. After treatment his fits were severe major attacks.

We were at this time desirous of studying the relationship betwen epilepsy and calcium, but were unable to do so until recently, when, coming across Blair Bell's[2] work on the estimation of calcium in the blood and urine, we were enabled to investigate the subject by his methods. It is the result of investigations made on the calcium blood content and the excretion in the urine of epileptics, together with clinical observations on treating epilepties with salts of calcium and with extracts of those ductless glands that control the calcium metabolism that we make the subject of this paper.

On one patient we made daily estimations, on others bi-weekly or weekly, and on others only clinical observations were recorded. It was in some of these, unfortunately, that the results were most pronounced.

We examined the blood and urine of 35 patients, and compared them with similar examinations made on twelve members of the staff. In the case of the staff, the average blood content was within the normal range and the average urine content normal; whereas the blood content of the epileptics was .6 of normal and the urine content .14 of normal.

Sir James Barr[3] states that acid drugs and food will increase the attacks in epileptics by diminishing their calcium. We treated two patients with dilute phosphoric acid and two with citric acid for two months, and made weekly observations upon one of them. Two of these patients showed a slight increase in the number of their fits, being one or two above their average in each month. One had no increase, but the month following that in which the acid was discontinued he had the highest ever recorded against him, *viz.*, 10, his previous maximum being 8 and his average for six months being 5.6. The fourth patient had 18 attacks during the second month of his treatment, this being more than double any previous monthly record, his average for six months being 5.

It was upon the third patient, who reacted least or who reacted late, that we made weekly observations. His calcium blood content was at first low;

during the first month it rose and then fell, rising gradually to above the normal towards the end of the second month. The excretion was irregular and below normal, rising at the time the blood value was lowest, and falling as the blood content rose. The four patients, taken together, show an increase of fits of 40% above their average for a similar period.

Eight female patients were treated with calcium. One of them for two months had dilute phosphoric acid, and afterwards calcium. All these patients showed some improvement.

Notes of Cases.

1. C.B., a dull epileptic, æt. 25 years, admitted in February, 1908, with a history of having been subject to epilepsy since seven years of age. She had, on an average, ten fits a month. Before and after an attack she would be in a stuporous state for some days, followed by a period in which she would be resistive and violent. She would be in this state for from seven to ten days every month. In June she was given a mixture of calcium and bromides. For the next four months she averaged six fits a month; in August she had none, her previous minimum being six. The fits that occurred in June and July were not followed by the stuporous condition, and in these months and in August she was mentally brighter than she had been for years, and became a good, industrious worker. Towards the end of August her medicine was discontinued. In the first week of September she had ten fits, and was extremely dull for ten days. In October she again improved markedly, having but four fits; for two days previous to one of them she was in a condition of stupor.

In June and July, in which she had six and seven fits respectively, the blood content was, except on two examinations, about half normal; the excretion varied greatly, being mostly subnormal. In August (the month in which she had no fit) her blood content was normal, except on one examination made two days after the commencement of a menstrual period, when it was less than half of normal. She had an epileptic fit daily on September 2nd, 3rd and 4th. On the 5th she had five, and on the 6th one, being all these days in a condition of semi-coma. Her blood content on September 2nd was one-third over normal; on the 4th it was normal. On this date some cerebro-spinal fluid was drawn off under pressure; it was milky, and the fluid, being prepared by the same method as for blood, was found to contain 17,880 crystals per c.mm., which is probably a great excess. The fluid showed no other abnormality. We have examined other cerebro-spinal fluids, both in epileptics and others, for calcium, though in no large number. They have contained less than half the amount contained in this fluid.

On October 10th and 11th she was again in a condition of stupor. On the latter date she was given an injection of adrenalin in saline solution. The next day she was bright and well; apparently a very marked shortening of her period of stupor. This patient's fits are in no relation to her menses, but she shows, as pointed out by Blair Bell,[4] a pre-menstrual rise and a post-menstrual fall in her calcium blood content. The periods are irregular, but she has a regular rise in the blood content about the time the flow should recur.

2. L.P., æt. 35, was admitted in May, 1906. Her fits commenced at the age of 12. She has an epileptic aunt and cousin. This is a lethargic and apathetic patient, whose fits are associated with a periodic cyanotic condition of her fingers and toes. She was treated in June with calcium and bromides. For the previous six months she had averaged seventeen fits per month. In June she had eleven, in July fourteen, August seven, and in September none. As she suffered in August from some vague abdominal pain, with pyrexia, and had some trouble and pain on micturition, the treatment was discontinued at the end of this month. During September she was brighter, did some sewing and would converse rationally, neither of which she had done for at least two years. In October she relapsed, was very dull, often cyanotic, and had 22 fits. In November (a month that we are not at present reviewing) she made a decided mental improvement under thymus and thyroid glands. From June 1st to July 20th her calcium blood content was subnormal, except on two counts, often being very low, and, during this time, her excretion was low, varying from .1 to .5 of normal. From July 23rd to the end of September, during which time she had no fit, her blood count was, with the exception of one count, normal or slightly above, and her excretion was, with two exceptions, normal or above. In October she had 22 fits, the cyanotic condition of her fingers and toes returned, and she was in a state of stupor. Her calcium blood content showed a marked fall, and her excretion was also greatly diminished.

3. L.R., admitted March, 1914, has been subject to fits since two years of age. She went to school for five years, but had to leave on account of the epileptic attacks. She is a dull and stupid patient, without any interest in life, of puerile and degenerate appearance, and with abundant growth of hair upon her face. Since admission she has averaged 21 fits a month, ranging from 12 to 24. In August she was given calcium and bromides, and, during this month, she had six fits, five of them being menstrual. In September she had no fit, but, towards the end of the catamenia she became very restless, which is usual with her before having a fit. She was therefore given calcium iodide hypodermically.

In October she had one fit on the day preceeding the termination of her menses. No observations were made on this patient until October, during which month she had an almost normal blood content, but a poor excretion.

Although the number of her fits have been very greatly reduced, she is no brighter mentally.

In June and July she did not menstruate; during the next three months, while taking calcium, the periods appeared at regular intervals.

4. E.O'B., æt. 28 years, was admitted in July, 1911. Previous to treatment, she averaged ten fits a month. From June 1st to the end of October she was taking calcium and bromides; the average num-

ber of fits for three months had not diminished, being 9.8, but her mental improvement was marked, and the effect of a fit much less severe. Hitherto a fit would be followed by a stuporous, and then a mild maniacal condition, which would continue for several days. The fit is now followed by no after effects; she is brighter and has more interest in life. Her memory and conversational powers have much improved. The majority of this patient's fits take place immediately after or during a menstrual period. Towards the end of these periods in September and October, she was given calcium hypodermically, with the idea of increasing her calcium index.[5] In September she apparently improved, having only one fit after the second injection, but in October she apparently obtained no relief from this treatment. This patient shows a progressive fall in her calcium blood content during her menstrual periods. Observations made on the second, fifth and eighth days after the commencement of the flow gave counts of normal, half and third of normal respectively. In all observations made her excretion was low. In October she was given thymus gland, in addition to the calcium, in the hope of shortening the time of menstrual period and thus saving the waste of calcium.

5. S.W., æt. 32 years, was admitted in 1903. The supposed cause of epilepsy was stated to be sunstroke. She was treated from June to the end of October with calcium and bromides, and her previous average of 9.5 fits per month was reduced to 5.4. In September she had but two (never before having been credited with less than eight in any month), both of them while menstruating. After the second attack she was given an injection of calcium, and had no more this month.

The menses in this case are irregular, and not, as a rule, specially associated with the epileptic attacks. No estimation of the calcium content was made on S.W.

6. D.K., æt. 25 years. This patient was subject in infancy to convulsions, which were followed during childhood by fainting attacks. At eleven years of age severe epileptic fits were noticed, and these have continued. For six months she had an average of ten fits per month, with a maximum of thirteen and minimum of three. In June and July she was given dilute phosphoric acid, and in each month had eleven fits. In August, the patient was placed on calcium and bromide treatment, and the fits fell to seven; in September she had three, whilst in October she did not have any. It would appear from this that the acid had some slight effect, the average during its administration being eleven, as compared to ten, and during the three succeeding months she totalled only ten in all.

7. E.D., æt. 22, is a dull imbecile, who has had epileptic attacks since infancy. During the half-year preceding June she averaged eleven fits monthly. In June she was treated with calcium and bromide. The fits from June to October averaged 6.4, thus showing a slight reduction from her previous number. There was also a slight concurrent improvement in her mental condition. In September, the patient menstruated for the first time for six months, and, during this period, from 24th to 27th, had four fits.

8. W.S., æt. 24 years, has had severe fits for the last ten years. For six months prior to May 31st she averaged ten fits monthly. In June she was given calcium and bromide, and this was continued to the end of October. She made but little improvement until October, when she had the minimum number of fits recorded against her, *viz.*, three.

We have also treated ten male patients in the same manner, but the results in these have been less uniform and not quite so promising.

In eight there has been improvement, though in some cases slight. In one the number of fits has been greatly reduced; in two there has been definite mental improvement. Two cases showed no change. In one of these there is a traumatic history; one is a case of hystero-epilepsy.

9. E.S., æt. 50 years, is an epileptic of thirty years standing, who, during the last twelve months, has averaged 16 fits monthly, with a maximum of 22 and a minimum of eight. During this period he was taking bromides. In June he received no treatment, and daily observations were made on the calcium of his blood and urine. In this month he had 25 fits. In July he received bromides and calcium, and had 14 fits. In August, 5 grs. of thymus were given daily, a reduction to 12 following. In September he received 10 grs. thymus, and the fits were 21. In October, with the same treatment, he had ten. Comparing the period of five months with the previous twelve months, we find the average number of fits to be 17, but, excluding the month without treatment, the number would be 15. There has, therefore, been no reduction in the number of fits, which occur, as is usual in this patient, in series. The mental condition has, however, been brighter, and the post-convulsive stupor less marked. The chief interest in this case is in the result of the observations on the calcium content in the urine and blood. In June, observations were made daily, and in July, August and September every other day. If we take the average of the results of the estimations for monthly periods, we find that the calcium content of the blood varies inversely with the number of fits, being highest when there are fewest fits, and *vice versa*. The urine content, on the other hand, varied directly with the number of fits, being highest when the number of fits was greatest. Further, if we examine the results with reference to the incidence of the fit, we find that on several occasions the series of fits was preceded or accompanied by a fall in the blood content and a rise in the urine content.

10. E.L., æt. 24 years, admitted in December, 1906, is a mischievous and quarrelsome epileptic, with but little intelligence and no appreciation of his surroundings. For twelve months he had averaged 40 fits a month, with a maximum of 64 and a minimum of 25. During this time he had been treated with bromide. Since October, 1914, he has had a salt free diet. In April and May he had a bromide mixture, four-hourly instead of three times daily, with the result that in these two months his average was reduced to 27. On June 1 he was given calcium and

bromides *ter in die*, and the number of his fits for this month were 18. From July 1st to the end of September he had the same medicine, but received it four-hourly. In these three months he averaged 13 fits a month, the lowest being in September, with six. In October he had, in addition, suprarenal gland, 5 grs., every morning; this month he had ten fits. His average for the five months was 13.5, as against 40.

11. E.S., æt. 29, admitted in August, 1907, is an epileptic imbecile, who has an epileptic sister. He has suffered from epilepsy since boyhood. For twelve months previous to August last he averaged 29 fits a month while taking bromides. From August 1st to the end of October he was receiving calcium, in addition to the bromide. During this time he had an average of 18 fits a month. Twenty-four of these occurred in October. In this month he was given pituitary gland, as well as the calcium, and, while having this, he had fits daily. The gland was therefore discontinued after ten days, and the fits immediately dropped in number. Since taking calcium the patient has also improved mentally. Previously he would remain dull and dazed for half a day after a fit, incapable of conversation or work. He is now bright within a few minutes of the convulsions, and immediately returns to his work; he is also less quarrelsome than formerly.

12. J.Y., æt. 10 years, has had epileptic fits of a mixed type (minor and major since 1913). The onset was said to have followed vaccination. For six months he had been having about 60 fits a month, and was getting worse. He has been treated with bromides and calcium lactate since November, 1914. In April last the calcium lactate was suspended, and the boy, who still received bromides, had 29 fits, the highest number in the preceding four months being nine and the average 7.2. In May he had 22 seizures. During the period of six months he averaged ten minor and three major attacks. In June, when calcium iodide was given with bromide, he had 36 fits, but in the following month, when calcium lactate was again prescribed, the number fell to 17, and in the succeeding months, with the same treatment, he had 15, 17 and 9 attacks, all except one being minor.

Observations were made weekly on the blood and urine. In June (the month with the largest number of fits), both the blood and urine contents were low, the former being half and the latter third of normal. Corresponding with the reduction in the number of fits there was an increase in both the blood and urine content, which approached closely to normal in the months with the smallest number of fits. In October (the month with the minimum of fits during the period of treatment), the patient was given thymus gland, in addition to the calcium.

We have estimated the calcium content in two cases of *status epilepticus*. One showed an increase in the blood content of double normal, in the other it was normal. The calcium blood content, in cases after a series, we have always found to be high, and the excretion usually very low.

Ballantyne[6] records a case of a patient in the sixth month of pregnancy suffering from severe chorea, who showed improvement after intravenous injection of a solution of calcium chloride. We have tried this treatment in two cases of *status epilepticus*. In the first case, the patient had 74 fits in four days, and was extremely exhausted and comatose. After an intravenous injection of calcium chloride, she had two attacks within a few hours, and then rapidly improved, regained consciousness, and had no more fits. Six days later she died with respiratory failure. No *post mortem* examination was allowed.

In the second case, adrenalin was given with the calcium and saline solution. Though the patient was almost moribund, she regained consciousness in six hours, and quickly recovered.

Conclusions.

The patients we have treated are the most unpromising that could be found, all, with the exception of J.Y., being cases of long standing and in advanced dementia, though several of them have become brighter, take more interest in life, and are happier and work more intelligently than formerly.

Our work is still tentative, and though our results are imperfect and fragmentary, and have not extended as yet over a sufficient number of cases or length of time to enable us to draw definite conclusions, we think they tend to show—

(1) A diminished amount of free calcium in the blood of epileptics, also a diminution of the excretion in the urine.
(2) That epileptics may be benefitted by giving them calcium. In the case of two patients who were treated for a period by calcium alone, the number of fits in each case fell below the previously recorded minimum.
(3) The effect of calcium is great, if combined with bromides.
(4) Calcium and bromides, given together, give better results than either calcium or bromide alone.
(5) Menstruation precipitates fits by promoting calcium changes, and by increasing the calcium index by hypodermic injections the number of fits has been diminished.

During the period under review, the total number of fits of all our patients was less than the average for a similar period by 528: a reduction of 31%.

Of the eight women treated, all of them improved, four for one month each had no fit, which had not before been recorded of any of them. All showed a lessened average, and in the case of L.R. the average was reduced from 21 to 2.3 fits a month, her previous lowest being 16.

Four became mentally brighter. Two patients in whom the post-epileptic states of mania or stupor were very pronounced for some days now return to their normal almost immediately after an attack.

Of the male cases, the first patient (C.W.) was probably a mixed case of hystero-epilepsy and epilepsy, but the improvement was none the less remarkable, and has been maintained for more than two years, although he was only treated for one month. It is stated by Bell[7] that all cases of hystero-epilepsy will improve with calcium, but one case that we have regarded as such and treated with

calcium and thyroid is so far among our unimproved. The cases of E.L. and J.S. are instructive, both showing a great fall in the number of fits under calcium, although they had been treated with bromide for years. The addition of pituitary extract in the case of J.S. increased the number of fits.

We are pursuing the subject further, and are studying the relationship of the ductless glands to the free calcium and to the calcium excretion, and also the relationship of the free and fixed calcium to epilepsy, and hope at another time to offer more observations upon this matter.

References.

[1] Indebted to Dr. Coutie for permission to use the notes on this case.

[2] Bell, W. Blair—"Estimation of Calcium Metabolism," *British Medical Journal*, 1912, II., 879.

[3] Barr, Sir J.—"Lime Salts in Health and Disease," *British Medical Journal*, 1910, II., 829.

[4] Bell, W. Blair—"Observations in Physiology of Female Genital Organs," *British Medical Journal*, 1909, I., 592.

[5] Barr, Sir J.—"Rôle of Calcium Salts as Therapeutic Agents," *British Medical Journal*, 1912, II., 695.

[6] Ballantyne, T. W.—*British Medical Journal*, 1912, II., 1124.

[7] Bell, W. Blair—"Use of Hormones in Gynæcological Disorders," *The Practitioner*, February, 1915.

Reports of Cases.

A CASE OF SHELL SHOCK.

By **W. Ernest Jones, M.R.C.S., L.R.C.P.**
Inspector-General of the Insane of Victoria, Melbourne.

It is already very obvious that the war will bring us many cases of little-understood nervous and mental affections, not only where a definite wound has been received, but in many cases where nothing of the sort appears.

The mental stress of going into action must be of a very severe character; even our bravest and best do not go into a charge in quite the same way that they would dash into a football scrimmage, and the long hours of patient waiting in the trenches must produce a state of acute apprehension amongst the most callous and even tempered alike.

The war may produce no new "psychoses," but it will doubtless bring us many unusual cases of neurasthenia, hysteria, phobias and obsessions of various kinds. It may be found, too, that many cases of general paralysis of the insane will be admitted to our Mental Hospitals, for the stress and hardships of campaigning will inevitably break down many of those men who have had the misfortune to contract syphillis, and who have received treatment possibly only a little inadequate.

Perhaps the most interesting class of cases we are beginning to see, inasmuch as they are most difficult of explanation, are those in which grave temporary disturbance of the special senses occurs. Cases of loss of memory, deafness, loss of speech, blindness, stammering, are reported as of frequent occurrence on the western front. Up till now, however, we have had a much smaller proportion returned to our Base Hospitals in Australia, so that for us at any rate such a case as that of Private F. T. may be worth putting on record, the causation and progress of the disorder being interesting, the termination in recovery almost dramatic in character.

F.T. is an Englishman, born in the County of Essex, enlisted at the age of 20, went with the Australian Imperial Forces to Egypt, thence to Gallipoli. His medical report shows that on the 29th July he was almost completely buried by a fall of earth resulting from the bursting of a high explosive shell. He was admitted to the Tigne Hospital on August 5th, and subsequently transferred to Cotenera (Malta).

The report goes on: "Since his arrival in Malta he has not spoken, and until a few days ago (September 17, 1915), sat staring vacantly into space; occasionally he had impulsive outbreaks, during which he attempted to get away from the ward. Recently he has shown a little more intelligence, assisting the orderlies in the ward, playing draughts with other patients, but cannot be persuaded to speak or write answers to simple questions. He is emotional, impulsive and moody."

The causation was stated as being "Cerebral Concussion." In another part of the report it is stated that "At times he would copy questions written down for him to answer."

On the transport bringing him back from Malta he appears to have remained in much the same condition, but on November 1, 1915,

> he had to be sent to a padded cell, as he became violent and noisy, disturbing other sick patients, and would not speak; assaults anyone who beats him at draughts; has violent destructive fits at night, and throws everything he can get out of the port hole. Demolished the padding of his cell completely one night; has to be constantly watched by two orderlies, who, however, are only needed when he has one of his turns. Has hyoscine gr. 1/10 occasionally with benefit, but resents it and threatens by signs. After destroying his cell, had occasionally to be restrained by a straight jacket. Bromide gr. XXV. had no calming effect."

One of his shipmates informed me that on one occasion, while in a frenzied condition F.T. tried to throw himself overboard, which perhaps accounts for the diagnosis of his disability as "melancholia." He landed in Melbourne, and was taken to the Base Hospital, and was seen by me two days later. I found him to be a healthy looking, fresh complexioned young man, in good condition, but with rather a dazed expression. He could not hear apparently, and could not articulate a word, and did not or could not make any sound. By signs he would indicate his wants, but he could not read or answer any written question. If a pencil and paper were put in his hands, he would draw in rather a crude way a ship or a gun, or some other object chiefly related to his recent experiences, and would copy any question put to him in writing. He played draughts intelligently, and associated himself closely with one of his shipmates. In about four days' time he appeared brighter, and was able to communicate in writing, answering my questions as to his age, birthplace and relatives correctly. On my asking him to put a written question to me he immediately wrote, "Do you think I am mad?" On my giving him a decided answer in the negative, he appeared much relieved, and shook hands heartily. He was next sent to the Military Convalescent Home at Highton, Camberwell, where he continued to make good progress, and at one visit, which I paid him there, he appeared to be gaining physically, and communicated freely in writing, indicating that he had some confused appreciation of sound at times, but could distinguish nothing, neither could he hear any spoken word directed to him. Examination by various specialists revealed the fact that there was no organic lesion discoverable; his reflexes were normally active.

On December 4, he went with others from the Convalescent Home for a picnic to Warrandyte, and whilst there he killed a snake, and became rather excited about it. Shortly afterwards, when returning in the dark, it was noticed by one of his mates that F.T. was whistling the same song that the rest of the party was singing. At the end of it he clapped his hands, turned round quite naturally to the man next to him, and asked: "What is the next item on the programme?"

From that time onward he has apparently been able to hear and speak quite naturally, and at the time of regaining his speech he seemed to be the least disturbed and excited of the whole party, who were all naturally greatly surprised at such a startling *dénouement*. I saw him four days after this, and he appeared quite well, his expression bright and alert, his hearing quite normal, and but for a slight hesitancy, which might have been natural to him, his speech was quite clear, and his voice full and resonant. He expressed his desire to return to the front, and was ambitious of being allowed to join the Officers' Training School. His report sheet is, however, marked: "Recommended that he be discharged as permanently unfit," and it is probable that this recommendation is a wise one, al-

though it would be difficult to find a case in which predisposition plays so small a part in the production of a temporary neurosis.

In a paper on the Psychic Mechanism of the Voice in the *British Medical Journal* of December 11, 1915, Dr. P. W. Mott says that such cases of mutism are really cases of exaggerated hysterical aphonia. He quotes cases where a sudden return of the voice has resulted from some surprise or excitement, and he thinks the mutism is due primarily to a functional paralysis of the voluntary cerebral centres controlling the mechanism of the breath, inasmuch as many of these men cannot make any noise, whistle or even blow out a candle. By the case of F.T. differs somewhat from Dr. Mott's cases, on account of his deafness and his inability to comprehend at first any written or printed words put before him; a wider area of his field of consciousness was affected. Still it is possible that acute hysteria plays a great part in the production of his disorder, as evidenced by the reports of his mental condition in Hospital at Malta and on the transport coming back to Australia.

A. Sarbo (*British Medical Journal*, July 10, 1915) attributes these cases of nerve shock partly to concussion of the cerebro-spinal fluid, and partly to concussion of the nerve substance itself. He refers to shell shock cases with deafness as being caused by some injury to the auditory centre in the medulla, and another group exhibiting more unconsciousness and interference with speech he attributes to micro-organic changes in the parietal convolutions.

Karplus (*ibid*) attaches great importance to a "premorbid personality," and says that underfeeding, or exhaustion also plays a prominent part in the production of these shell shock "neuroses."

The pathology of these disorders has yet to be written.

Reviews.

IMMUNITY.

The authors of "Applied Immunology"[1] explain that in presenting this book to the medical world, they have been moved by a desire to perform a sadly neglected task. "A concise presentation of immunology in its entirety for the practical grasp and comprehension of students and practitioners" is in their opinion wanting. It may be admitted at once that the available books dealing with immunity have been written by bacteriologists and bio-chemists, and deal with these difficult problems primarily from the aspect of the laboratory. The present work is written by practitioners, and in it they have attempted to keep the practical aspect of the many questions more prominently before the reader than the strictly scientific. They put forward as a potent argument in favour of the publication the fact that pharmaceutical firms are assuming the functions of teachers of therapeutics, and that this is not always carried out impartially or to the best interests of medical science. As an example of this, they sum up a short chapter on phylacogens as follows: "We are of opinion that the therapeutic use of phylacogens is based upon erroneous conceptions of infection and immunity, is unscientific, empirical and unjustified. Moreover, there is evidence that their administration is not unattended with risk to the patient." If the popularizing of the subject to practice could eliminate the tradesman from academic functions, the authors will have placed the profession under a debt of gratitude to them. There is, however, one grave danger in applying the theories of immunity in a cut-and-dried fashion to practice. Dogma is apt to creep in, before hypothesis has received sufficient support to justify its acceptance. The authors have done their best to minimize this fault, but the task is impossible. In many instances they preach gospel, when the pure bacteriologist would teach doubt. In other works on immunity, the authors may urge acceptance for their own theories arising out of their individual researches, but the reader must recognize then that the views are those of the authors. When Almroth Wright teaches that the opsonic index, if properly employed, is a reliable expression of an animal's resistance against infection, no objection will be raised, because the reader knows that Wright has placed this view before the scientific world. But when the authors claim that to ignore the index absolutely in all cases will be to invite disaster, many competent observers will ask for proof in support of the contention.

A critical or hypercritical review of the book might contain many reproofs and corrections. In the majority of the instances, disagreement would have to take the form of asking the question: "Are we sure that this view is correct?" At times the hypercritic would prefer to admit ignorance rather than express conviction. But we venture to hold the opinion that some of the dogmatic utterances of the authors, and many of their specially personal doctrines are rather advantageous than disadvantageous, inasmuch as they crystallize thought and place the reader in possession of something definite to work on. For this reason we pass over the first few chapters, which deal with generalities in immunity and immune sera, with the remark that the short descriptions are well given. The treatment of complement fixation lacks a full account of the experimental evidence of the nature of immune body or amboceptor. Even in the chapter on Ehrlich's side-chain theory only the facts and not the arguments are reproduced. The practical application of the Wassermann test is given in detail, and is an excellent exposition of the subject. We are less inclined to write enthusiastically on the description of the gonococcus complement-fixation test. The authors pin their faith on Schwartz and McNeil's modification of Müller and Oppenheim's application of the test. They sum up the position, viewed by them in 15 assertions, which remind us of the curate's egg, being good in parts.

Their chapter dealing with Abderhalden's biological test for pregnancy, Baeslack's sero-enzyme test for syphilis, Abderhalden and Fauser's reaction for mental affections, the meiostagmin reaction for the diagnosis of bacterial infections and the epiphanin reaction need more scientific treatment to convey any clear impressions on the mind of the uninitiated. No useful purpose is served by generalities in connexion with such complex problems. Tuberculin claims much space, but not too much. The authors are guarded, and their doctrines will find favour with many competent judges. They hold that it cannot be claimed that tuberculin is a specific for tuberculosis, and that it is not a direct curative agent in this disease. They regard it as an accessory agent of nature, and hold that it serves a useful purpose in the treatment. The list of tuberculins is mercifully not complete. In this connexion they give the minimal effective dose as 0.00001 milligramme, and the maximum dose as 100 milligrammes. In the chapter headed "Bacterial Inoculation," they express the opinion that failures result from improper administration; the doses are either too small or too large. They urge practitioners to pay attention to correct dosage. Apart from the difficulty in standardizing doses of tuberculin, it appears to us to be strange that the maximum dose of a potent preparation could be ten million times that of the minimum. If an analogy were drawn with strychnine, the minimum dose might be taken as $^1/_{100}$ grain, and on this basis the maximum would have to be about 14 lbs. Surely there must be something wrong about the dosage of bacterial products as handled by physicians at the present times. The utterance of the authors that failures are at times due to low powers of observation on the part of the practitioner, to overwork, indifference, over-enthusiasm or prejudice is probably based on fact. But even the most skilful and keen practitioner will not be protected from failure when dealing with vaccines of which so little is known that men differ as to the quantity to be given in a dose within such a wide limit.

[1] Applied Immunology: The Practical Application of Sera and Bacterins Prophylactically, Diagnostically and Therapeutically, with an Appendix on Serum Treatment of Hæmorrhage, Organotherapy and Chemotherapy, by R. A. Thomas, A.M., M.D., and R. H. Ivy, M.D., D.D.S., 1915. Philadelphia and London: J. B. Lippincott Company: Demy 8vo., pp. 359, with 5 coloured plates and 68 illustrations in text. Price, 16s. nett.

We learn from the *Mail* (Brisbane) that the resignation of Dr. Eugen Hirschfeld of his position as a member of the Queensland Medical Board has been accepted by the Government.

The Medical Journal of Australia.

SATURDAY, MARCH 4, 1916.

War and the Nervous System.

Under the title "Shell Shock," Dr. W. Ernest Jones describes in the present issue a functional disease of the nervous system resulting from the explosion of shells. He points out with justification that the record of this case may be of practical value to military surgeons within the Commonwealth, who will doubtless be called upon to deal with similar conditions in returned soldiers in the near future. Experience of the battlefield has revealed much interesting information in regard to the effect of fright, fear of death, physical shock and actual trauma on the nervous system. Cases of functional aphasia have been published (see *The Medical Journal of Australia*, February 26, 1916, p. 191). In some of these cases the individuals were overcome by the violence of the explosion, and were found later to be in a state of complete aphasia. The symptom disappeared suddenly in one case during alcoholic intoxication and in two others during the excitable stage of ether anæsthesia. The condition described by Oppenheim in 1889 as "traumatic neurosis" must be distinguished from that following on a definite gross injury to the spinal cord or brain, and whether this term is retained or not, the affection which Dr. Ernest Jones deals with should be defined as neurasthenia, hysteria or hypochondria elicited in an overwrought individual by some intense emotion. The physician may have some difficulty in distinguishing these cases from malingering. The clinical histories at times read as if the patient were feigning the symptoms causing their incapacity. Dr. David Forsyth has recently[1] described several cases of this category, and has brought out the extraordinary tendency of the patient to respond to the shock by a symptom to which he has previously given attention. For example, one soldier was attacked by gypsies, and fell unconscious after receiving a blow on the head delivered from behind. He was blind when he recovered consciousness. When he had presented himself as a recruit, he had remarked that he had trained in a smithy, and had heard it said that blacksmiths often went blind from working at the forge. Another patient, who became paralysed in both legs after having his horse shot under him, stated that he had heard it stated that a man who breaks his back is paralysed in his legs. Needless to add, the patient's spine was not injured.

Dr. Forsyth goes fully into the mental process through which many soldiers pass on taking part in a military campaign. When the man has psychopathic tendencies prior to his service with the colours, the effect of the strain, which every soldier must experience and overcome in battle, may be disastrous. Starting with a condition of excitement in anticipation of the unknown, passing on through the stage of fear associated with the first experience of shell or shrapnel and of seeing others hit in his neighbourhood, a soldier with an unstable nervous system is indeed likely to exhibit some strange manifestations of an hysterical or neurasthenic nature when he attempts, with or without success, to compose himself and preserve command over his actions. In its mildest form, there is the scared look which has been remarked on so frequently during the great war; in its most severe type, the alienist finds some definite form of psychosis. These functional affections should not be regarded lightly nor left untreated. The patients are wholly irresponsible for the occurrence, and recovery takes place when judicious and skilled treatment is applied. The affection is not new; it has only become more frequent under the conditions of modern warfare.

[1] Functional Nerve Disease and Shock of Battle, *Lancet*, December 25, 1915.

BERI-BERI IN THE AMAZON BASIN.

Even in tropical countries acquaintance with the accumulating mass of information regarding preventive medicine is limited, and years may pass before the majority of medical practitioners become aware of new facts. A story of much interest is told concerning beri-beri in the valley of the Amazon by the medical officer[1] in charge of the Candelaria Hospital, which treats the employees of the Mediera-Mamore railway, which lies 1,500 miles from the mouth of the Amazon, on the east bank of the Madiera River. Dr. A. M. Walcott had experience of beri-beri at San Francisco in 1906, and from 1907

[1] *Journ. Amer. Med. Association*, December, 1915.

to 1909 at Panama. Since 1909 he has been in the service of the Railway Company at Candelaria. During the first half of his six years' service he held a subordinate position, but since November, 1912, he has been head of the medical department of the railroad. During the four years ending January 1, 1912, 30,000 admissions were made to the Candelaria Hospital. The diagnosis of beri-beri was made in 963 cases. The medical officer in charge was of opinion that beri-beri was due to a germ, and that food played no part in its causation. The treatment was symptomatic and the mortality 15% of the cases admitted.

Dr. Walcott was an unwilling witness to these results. The medical staff of the hospital were affected, and seven doctors and some nurses were deported or buried owing to this disease. The diet consisted of tinned vegetables, tinned soups, tinned meats, tinned fish, farina de agua, fresh Irish potatoes, dried Spanish onions, fresh eggs, wheaten bread and cakes and concentrated milk. Since taking charge of the hospital, Dr. Walcott has eliminated polished rice and tinned foods from the dietary of all connected with the hospital. The deficiency in food has been made up with fresh fruit and vegetables together, with some fresh fish and meat. A herd of cows has been collected and fresh milk is being supplied. No further cases of beri-beri have occurred among the hospital staff. Cases are still admitted, as the medical officer has no control over the diet of the employees of the company. Most of them live mainly on farina de agua, which is derived from the wild mandioca. By appropriate feeding experiments on birds Dr. Walcott has obtained evidence that the method of preparation of this national flour removes the vitamine present. The lesson of the hospital is spreading widely along the valley of the Amazon, and many of the plantations are seeking advice as to the diet of their employees. The gain to the community has been immense, since not only has the mortality disappeared, but hundreds of employees who lost months of work through beriberi are now in perfect health. Previous experience had shown that an employee who became affected with beri-beri did, on the average, four months' work before being repatriated or buried. Dr. Walcott is to be congratulated on his three years of patience which ended so happily. It is only occasionally that the apostle of a new treatment witnesses so marked a tribute to his labours.

ANTITYPHOID INOCULATIONS AND AGGLUTINATION.

The serum of a healthy man does not give a Widal reaction when tested against a typical strain of *bacillus typhosus*. But when the individual has received injections of killed typhoid bacilli, agglutinins appear in his serum. It is probable that the immunity conferred by the inoculations runs parallel to the agglutinating power of the serum. A considerable amount of experimental evidence has been collected in support of this view. The importance of possessing in the Widal test a measure of the immunity conferred by inoculation is great, and it is therefore necessary that all aspects of this relationship be closely analysed. Dr. D. I. Dakeyne, working in Professor Delépine's laboratories in Manchester, has investigated the agglutination reactions of 280 soldiers who had been inoculated within 12 months.[1] While the number of his observations is comparatively small, the results are so consistent that he appears to be justified in drawing certain conclusions. It appears that, taking the whole number of soldiers haphazard, no less than 16.4% yielded negative serum results. A man inoculated twice has a much greater chance of developing and retaining a reaction than one inoculated only once. The second deduction is that there is a gradual diminution in the reaction in the course of time. The data published show that the serum of men inoculated within four months agglutinated well, provided that two or more inoculations had been carried out. Three or four inoculations appear to produce the antibody in greater quantity than two inoculations. There does not seem to be any correspondence between the violence of the inoculation reaction and the appearance of agglutinins. This is not surprising, since there is no evidence that inoculation, followed by marked symptoms, produces better protection than inoculation followed by mild symptoms. Dr. Dakeyne's work therefore tends to suggest that the agglutination test of Widal may be regarded as a measure of immunity following inoculation with *bacillus typhosus*.

Naval and Military.

We regret to report the death of Captain K. Hammand, of Clifton, Queensland, as a result of wounds.

According to the Melbourne newspapers, Dr. W. P. Norris, Medical Adviser to the Commonwealth in London, left London on February 23, 1916, on a visit to America. It is stated that Dr. Norris is in ill-health. We have no information as to who will undertake his duties during his absence.

Among the list of those mentioned in Viscount French's despatches on account of gallantry in the Battle of Loos, is the name of Lieutenant W. E. David, R.A.M.C. Lieutenant David has been promoted to the rank of Captain. He is the son of Professor David, of the Sydney University.

The following appointments have appeared in the *Commonwealth of Australia Gazette*, No. 28, under date of February 24, 1916:—

1st Military District.

Australian Army Medical Corps—

The provisional appointment of Captain G. G. O. Phillips is confirmed.

Honorary Captain J. I. Robertson is transferred from Australian Army Medical Corps Reserve, and to be Captain (provisionally and temporarily). Dated 10th February, 1916.

Australian Army Medical Corps Reserve—

William Sidney Page to be Honorary Major. Dated 29th September, 1915.

Robert Thompson to be Honorary Major. Dated 10th February, 1916.

Edward Elmslie Brown and Richard Howard La Barte Cummins to be Honorary Captains. Dated 10th February, 1916.

Harold Shaw Fleming Moran and David Adcock to be Honorary Lieutenants. Dated 10th February, 1916.

Honorary Lieutenant R. C. Cowley to be Honorary Captain. Dated 15th January, 1916.

[1] *The Lancet*, September 4, 1915.

2nd Military District.

Australian Army Medical Corps—

Captain W. W. Martin is transferred from Australian Army Medical Corps Reserve, and to be Captain (temporarily). Dated 1st October, 1915. (This cancels the notification respecting this Officer which appeared on page 2946 of *Commonwealth of Australia Gazette*, No. 143, of 18th November, 1915.)

Australian Army Medical Corps Reserve—

Edward Thomas Thring, Cyril Ernest Corlette, Cecil Purser, Edward Harold Binney, James Macdonald Gill, John Lawrence McKelvey, Herbert Henry Bullmore, and James Linklater Thomson Isbister to be Honorary Majors. Dated 10th February, 1916.

Clement Henry Burton-Bradley and George Bell to be Honorary Captains. Dated 10th February, 1916.

Percy Samuel Poolman to be Honorary Lieutenant. Dated 17th December, 1915.

Unattached List—

Captain J. B. Moore is transferred to Australian Army Medical Corps Reserve, and to be Honorary Major. Dated 7th January, 1916.

3rd Military District.

Australian Army Medical Corps—

Honorary Major E. Champion is transferred from Australian Army Medical Corps Reserve, and to be Captain (provisionally and temporarily). Dated 9th September, 1915. (This cancels the notification respecting this Officer which appeared on page 2453 of *Commonwealth of Australia Gazette*, No. 116, of 25th September, 1915.)

Australian Army Medical Corps Reserve—

Alexander Lewers, Cedric Alwyn Stewart, and William Edward Davies to be Honorary Majors. Dated 10th February, 1916.

Percy Newall Whitehead, Alan Bothwell McCutcheon, David Alexander Cossar, William Henry Collins, John Hunter Henderson, Francis Josiah Bonnin, Richard Salts, Abraham Solomon Rubinowich, and Neil Raoul Henderson to be Honorary Captains. Dated 10th February, 1916.

Ernest Septimus Callanan, Lytton Vernon Stephens, James Monahan Lewis, and Reginald Duncan McCallum to be Honorary Lieutenants. Dated 10th February, 1916.

Honorary Captain E. L. Gault to be Honorary Major. Dated 1st February, 1916.

4th Military District.

Australian Army Medical Corps Reserve—

Roydon Herbert Ninton Connell to be Honorary Captain. Dated 10th February, 1916.

6th Military District.

Australian Army Medical Corps Reserve—

William John Patterson and Donald Pedro Lucadou-Wells to be Honorary Lieutenants. Dated 10th February, 1916.

Honorary Captain H. W. Sweetnam is transferred to Australian Army Medical Corps, and to be Captain (provisionally and temporarily). Dated 10th February, 1916.

THE LATE DR. F. MILLER JOHNSON.

Our attention has been directed to an inaccuracy in the obituary notice of Frederick Miller Johnson, published in *The Medical Journal of Australia*, February 5, p. 127. Dr. Miller Johnson was a grandnephew, and not a grandson, of the late Sir William Gull. His last letter, which was dated November 28, 1915, was written with his left hand the day before he was killed. He had received an injury to his right wrist through falling into a sap a few days before. Dr. Campbell, of Hobart, wrote that the arm was broken, and owing to bad weather there was no hospital ship to put him on, so he returned to his lines. Dr. Miller Johnson had been ill with jaundice a short time before the accident. He insisted on remaining on duty in spite of ill-health and of the pain he was suffering in his wrist.

TOBACCO FUND.

We have received a further contribution from Dr. V. M. Plummer, of Binswood, Adelaide, of 5s., thus bringing the total up to £37 16s. 1d.

BELGIAN DOCTORS' RELIEF FUND.

Queensland.

The Treasurer of the Queensland Branch announces that three contributions, amounting to £5 3s., have been received for the Belgian Doctors' Relief Fund during the month of February. Dr. A. J. Turner, of Brisbane, has contributed £2 2s.; Dr. Lillian Cooper £2, and Dr. A. S. Roe £1 1s.

Vital Statistics.

SOUTH AUSTRALIA.

The Registrar-General of South Australia has published the vital statistics for the month of December, 1915, in the South Australian Government *Gazette* of January 20, 1916.

The population of the State was estimated at 441,690 on January 1, 1915. During the month of December, 952 births were registered. The birth-rate was therefore equivalent to an annual birth-rate of 25.8 per 1,000 of population. The December birth-rate was lower in 1910, and higher in 1911, 1912, 1913 and 1914. The birth-rate for the whole year was 26.7. It is interesting to note that in 1914 the birth-rate throughout the Commonwealth was 28.05. The Statistician does not give the number of illegitimate births.

There were 454 deaths registered during the month, which is equivalent to an annual death-rate of 12.36 per 1,000 of population. This rate was exceeded in December, 1913, whereas the rates for December, 1910, 1911, 1912 and 1914 were lower. The death-rate for the whole year was 10.62. The number of deaths of infants under one year of age was 122. The infantile mortality works out at 127.1 per 1,000 births. In 1914 it was 76 for the whole year.

Among the causes of death, diarrhœa and enteritis heads the list with 85 deaths. In 63 of these the patient was under one year of age. Tuberculosis caused 36 deaths; in 27 the disease was localized in the lungs. There were 18 deaths due to pneumonia, 12 to meningitis, 9 to morbilli, 9 to bronchitis, 4 to enteric fever, 4 to pertussis, 4 to influenza, 5 to diphtheria and croup, 2 to dysentery, one to erysipelas and one to septicæmia. Diseases of the cardio-vascular system caused 45 deaths, 39 of which were due to valvular disease of the heart, 13 to cerebral hæmorrhage, and 2 to acute endocarditis. Cancer killed 25 persons and Bright's disease 22. There were three deaths from puerperal septicæmia, and two from accidents of pregnancy.

The returns for the city of Adelaide reveal the following facts: There were 101 births registered during the month, which is equivalent to a birth-rate of 27.96 per 1,000 of population. The number of deaths registered in the city was 114, of which 83 were of persons usually resident in the city. This figure is equivalent to an annual death-rate of 22.92 per 1,000 of population. Twenty-five infants under one year of age died during the month, which is equivalent to an infantile mortality of 250 per 1,000 births. Of the 25 infants dying during the month, 17 were affected with diarrhœa and enteritis. It therefore appears that the percentage expression of the infantile mortality is misleading, owing to the smallness of the actual figures and the existence of an epidemic of summer diarrhœa. Among the other causes of death, tuberculosis appears 11 times, cancer 9 times, meningitis 9 times, valvular diseases of the heart 8 times, and Bright's disease 6 times.

Abstracts from Current Medical Literature.

THERAPEUTICS.

(81) Liquid Petrolatum.

B. T. Brooks gives a summary of the chemical composition of pharmaceutical white paraffin oil (*Journ. Amer. Med. Association*, January, 1916). The hydrocarbons found in petroleum distillates may be grouped into five classes. Paraffin hydrocarbons of the methane series predominate in the gasolene and kerosene fractions obtained from most crude oils. Naphthene hydrocarbons are rarely found in the gasolene and kerosene fractions. They constitute the bulk of some crude oils, and thus occur in the Baku oil and the light kerosene of Trenton. Polynaphthenes are separated to form the higher boiling viscous oils used for lubricating purposes. Benzene hydrocarbons occur in all crude oils, but are separated in the refining process. Olefine hydrocarbons are distilled into the turpentine fraction. They are irritating, and are removed by treatment with sulphuric acid. Fluorescent and colouring matters should be removed completely in the refining process. The claim has been made that the Russian oils consist of naphthene hydrocarbons, whereas the American oils are composed mainly of methane hydrocarbons. The therapeutic effects of the two oils are therefore asserted to be different. This investigator finds that the white paraffin oils of America have been so chilled in the refining process that they are practically free from methane homologues. He suggests that they should be named white naphthene oils. He considers that only viscous oil, with a specific gravity of 0.885 should be used in medicine. They should be quite tasteless, and not become coloured on standing in a loosely stoppered bottle for ten days.

(82) A New Arsenobenzol Derivative.

J. F. Schamberg, J. A. Kolmer and G. W. Raiziss have prepared a new arsenobenzol derivative in the Dermatological Research Laboratory of the Philadelphia Polyclinic (*Journ. Amer. Med. Association*, December, 1915). They have instituted a careful comparison with salvarsan of German manufacture. They tested its sterilizing power on rats infected with four parasites, *Spirochaeta recurrentis*, *Trypanosoma brucei*, *Trypanosoma lewisi*, and *Trypanosoma equiperdum*. They found the last mentioned parasites the most suitable infecting agent for their investigation. Known numbers of the parasites were injected into the rats. When sufficient doses of their new preparation, of salvarsan or of neo-salvarsan were administered, complete sterilization of the animal occurred with a single dose. Mercury, copper, enosol and sodium cacodylate had no appreciable action in maximal non-lethal doses. The toxic dose of their preparation was no greater than that of German salvarsan. They have administered over 175 doses of their preparation in cases of syphilis in man without any accidents. In some cases reactive symptoms of chilliness, headache, nausea and vomiting have been noted. The therapeutic effects are indistinguishable from those obtained with the German product. A healing influence is often evident in forty-eight hours.

(83) Use of Anti-Meningococcal Serum.

Sir William Osler states the results of the use of sera during the winter of 1914 (*Practitioner*, January, 1916). At Salisbury, where 40 cases among Canadian soldiers were treated, with 26 deaths, there is a mortality of 63%. The sera used were from Burroughs Wellcome, Lister Institute, Mulford and Parke, Davis. A slight improvement was apparent with Mulford's serum, but there was no benefit from other sera. At Haslar the use of serum was abandoned after eight deaths in twelve cases. As different results have been obtained by other observers, he suggests that many sera may be inert. He thinks that some effort should be made to examine the activity of sera.

A. Gardner Robb records the results obtained at Belfast (*Practitioner*, January, 1916). From 1907 to 1913 the mortality was 24% on 120 cases. Since that date he has treated exactly 100 cases, with 36 deaths. He confesses to disappointment with these figures. In seeking for an explanation of the higher mortality, he is of opinion that the disease is not more virulent than formerly, that the age-incidence in the latter series should not yield a higher mortality, that the strain of meningococcus is not dissimilar, but that the serum is less potent. He uses full doses of 20 c.cm., sometimes even more, and repeats the dose freely. The serum is injected into the thecal sheath of the spinal cord.

H. D. Rolleston (*Practitioner*, January, 1916) gives a table of the results of treatment of 163 cases out of 170 which occurred in the Royal Navy. Eighty-nine died. Out of 105 cases treated with sera, 64 patients, or 61%, died. Among these, 70 received injections of serum between the first and third days. Sixty per cent. of these patients died. Twenty-four cases were treated with serum between the fourth and seventh days of illness. Fifty-eight per cent. died. Cases injected with serum later than the seventh day numbered eleven, of which 73% died. Cases treated with soamin alone, or lumbar puncture alone, yielded the lowest death rates.

M. G. Foster records the results of cases treated at Cambridge (*Practitioner*, January, 1916). He obtained such unsatisfactory results with serum that he gave up its use and employed repeated lumbar puncture.

(84) Ichthyol and Glycerine for Septic Wounds.

C. W. Duggan has used a mixture of equal parts of ichthyol and glycerine as a dressing for septic wounds of military origin (*Practitioner*, January, 1916). He claims that the advantages of the method are found in the absence of irritation of the wound, in the less frequent dressings that are necessary, in the great saving of lint, cotton wool and bandages, in the lessened strain of nursing, and in the short duration of the sojourn in hospital. The dressing does not adhere to the wound. He applies the preparation with a brush. On changing the dressing he avoids washing the surface of the wound. He recommends this treatment also for obstinate cases of ulceration of the leg.

(85) Elimination of Mercury.

K. M. Vogel and O. I. Lee have studied the elimination of mercury in cases of acute poisoning by corrosive sublimate (*Medical Record*, January, 1916). They find that the excretion of mercury in acute cases of poisoning may continue for periods of time ranging from a week to several months. The excretion usually continues longest from the bowels, but the gastric mucous membrane and the skin are also paths of elimination. They recommend that treatment should be continued as long as quantities of mercury are present in the excretions. Systematic washing of the stomach and frequent wet packing aid the recovery by protecting the renal epithelium, which is liable to permanent injury by the continuous passage of small amounts of mercury. In the acute stage, irrigation of the colon is of value in the rapid removal of the mercury accumulating within the intestines. A systematic table, showing the channels of elimination in 16 cases treated at St. Luke's Hospital, New York, is appended.

(86) Treatment of Cancer by Steam.

W. J. Gillette gives an account of sixteen cases of superficial cancer treated by steam (*Medical Record*, January, 1916). The object of this method of therapy is to coagulate the proteins of the cancer cells while not affecting the normal cells of the tissues. The tissues are not treated to a sufficient temperature to produce cauterization. The steam is utilized at a temperature corresponding to a pressure of fifty to fifty-five pounds to the square inch. He states that a recurrence has occurred in only four of his sixteen cases, which were all diagnosed as inoperable by ordinary means.

(87) Treatment of Rheumatic Fever.

B. Robinson (*Medical Record*, January, 1916) discusses the therapeusis of rheumatic fever. In cases in which disturbance of the stomach is present and in cases of severity with involvement of the brain, heart or eyes, hyperpyrexia or unusual distress, he advocates the use of the intravenous injection of salicylate of soda. He employs a dose of twenty grains administered as a 20% solution. In some cases he used enemata of salicylate of soda. A preliminary enema of soapsuds should precede the injection of the medicated

enema. The addition of 15 minims of tincture of opium to the enema is an advantage. In ordinary cases he prefers salicylate of ammonia to salicylate of soda, and he combines it with bicarbonate of soda or citrate of potash. He has never been convinced that the oil of wintergreen is preferable to the salts of salicylic acid with sodium and ammonium. In some cases he prescribes phenacetin and caffeine with the salicylate of ammonium.

UROLOGY.

(88) Perinephritic Abscesses.

W. F. Braasch deals with the subject of perinephritic abscess (*Surg. Gynaec. and Obstet.*, November, 1915). He questions the existence of a primary perinephritic infection. In analysing the material of the Mayo Clinic he finds that in 101 patients an operation was performed for abscess involving in the perirenal area. In 34 instances the abscesses were secondary to lesions in extra-urinary tissues. In 36 of the remaining 67 patients the abscess was right-sided, and in 32 it was left-sided. In 12 pyonephrosis was the source of the abscess. In three of these cases a hydronephrosis had become infected after a considerable time. Immediate nephrectomy was employed in 10 cases, and drainage with subsequent nephrectomy in 2. The abscess was due to renal tuberculosis in 10 cases and to nephrolithiasis in 11. Acute localized renal infection due to causes other than pyonephrosis, tuberculosis or lithiasis gave rise to 12 perinephritic abscesses. There was pyuria in all save two patients, and the cortical abscesses were only discovered at the operation. In four cases the perirenal infection was due to trauma. In 18 patients there was no evidence of renal involvement discovered at the clinical examination. The author suggests that in some of these cases a small solitary cortical or subcapsular abscess was a starting point of the suppurative process. The diagnosis of perinephritic abscess cannot be made unless repeated clinical analysis of the urine is made, unless the urine from each kidney is examined bacteriologically, and unless the renal function is estimated and a radiological examination undertaken. Of the 67 patients operated on 2 died as a result of the operation and 3 died three, seven and twelve months later. In 18 the wound healed in less than a month of the operation. In 16 others drainage was continued for two months,, in 6 for three months, and in 3 for six months. A fistula persisted in four patients for longer than six months. He concludes by advising that when there is a large fluctuating abscess and marked physical weakness, drainage may suffice.

(89) Tuberculosis of the Ureter.

D. Bissell (*Surg. Gynaec. and Obstet.*, November, 1915, enters a plea for the removal of the ureter with the kidney in tubercular disease of the former in the female. He advocates the combined transperitoneal and retroperitoneal routes, when the ureter and kidney are removed at the same time. The same combination is recommended when the ureter and its accompanying sinus are removed as a secondary procedure. The technique employed is as follows:—The peritoneal cavity is opened through a median subumbilical incision with the patient in the Trendelenburg position. A temporary catgut ligature is passed through the posterior surface of the uterus at its junction with the cervix, and another through the ovary and outer part of the round ligament. When these are drawn taut, the body of the uterus and the corresponding appendages are removed from the field of operation, thus affording a wide exposure of the ureteral area. When the ureter is diseased, it stands out clearly as it courses over the pelvic brim downward to the base of the broad ligament near the cervix. The peritoneum and underlying fascia are divided from the brim of the pelvis to within 1 cm. of the cervix. The ureter is then enucleated with the finger. The uterine artery may be tied and divided if necessary. The ureter is cut across below this, its ends sterilized with carbolic acid and alcohol, and tied tightly. The proximal end is then freed by a blunt dissection up to the renal area and coiled up. It is pushed beneath the caecum or sigmoid flexure. The peritoneal rent is firmly sutured, and the abdominal incision is then closed. A posterior lumbar incision is then made over the kidney. The kidney is removed with the intact ureter and as much of its fascial sheath as is necessary. The wound is sewn up in layers without drainage. The author reports five cases operated on by this method. In three the operation of nephro-ureterectomy was performed. In a fourth a simple ureterectomy was carried out for a degenerated kidney, and implicated lumbar sinus, and in the last the same operation with removal of the lumbar sinus was undertaken. None of the patients died from the operation, but one died six weeks later of pulmonary hæmorrhage, due to pulmonary tuberculosis. The symptomatic results in all the other cases were ideal.

(90) Shrapnel Bullet in the Bladder.

D. P. Penhallow (*Boston Med. and Surg. Journ.*, October, 1915) records the case of a soldier who was wounded at Ypres by a shrapnel bullet from a shell, which burst about 50 yards from where he was standing. After being wounded, he walked 600 yards to the dressing station, and then a further 200 yards to the ambulance. Five days later he reached England, and was admitted to the American Women's War Hospital. On admission, he was able to walk without discomfort. His temperature and pulse were normal. A small, penetrating wound, half an inch in diameter, was found in the median line of the back at the lower end of the sacrum. It was neither tender nor painful, and no sinus was discoverable. The patient felt perfectly well, save for some difficulty in micturition, especially when standing. The stream would start normally, and would then be checked suddenly, and considerable pain would follow. These symptoms were not present when micturition was accomplished in the lateral recumbent position. He stated that if he rolled over suddenly he could feel something move about in his bladder. The urine was macroscopically clear, but some pus and blood were detected under the microscope. On cystoscopical examination, a rounded body was seen to be lying to one side of the urethra. No wound was detected in the bladder wall. A skiagram demonstrated a foreign body in the region of the bladder. The bladder was opened suprapubically under ether, and a bullet was removed. It was a lead ball ½ inch in diameter. It had been in the bladder for four weeks, and was becoming encrusted in several places with salts. Convalescence was uneventful.

(91) Prostatic Obstruction and its Sequelæ.

J. S. Joly (*Practitioner*, December, 1915) deals with the symptoms, sequelæ and complications of enlargement of the prostate, and discusses the results obtained by prostatectomy and by catheterization, more especially from the point of view of the subsequent comfort of the patient. Convalescence after prostatectomy usually lasts about one month. According to Watson, the mortality during the first month of "catheter life" is just below 8%. The death-rate during the first two months is considerably higher than this figure. Watson arrived at his conclusions from a consideration of 207 cases under the care of Rovsing, Casper and himself. The author anticipates that a higher mortality exists among the patients of less experienced urologists. In regard to the material at St. Peter's Hospital for Stone, Joly found that in the eight years preceding 1915, 651 patients were subjected to prostatectomy for benign prostatic hypertrophy. Forty-seven of them died, which is equal to a mortality of 7.2%. It thus appears that the mortality of prostatectomy is less than that of catheterization. In considering the condition of the patients who had been operated on, he found that cure had been effected, and that after one month they were practically in a normal condition. After palliative treatment had been applied, the patients entered on an existance of discomfort and danger, and were practically debarred from taking part in the ordinary pursuits and pleasures of life. The author holds the opinion that a patient is subjected to a double risk when he is advised to try self-catheterization, and, if this fails, to submit to an operation. No less than 63% of the deaths after operation were due to renal failure, consequent on the undue delay in operating. The author concludes that if patients were systematically advised to undergo operation as soon as definite signs of prostatic obstruction were discovered, the mortality would fall to about 3%. Operation was not an alternative to catheterization. It was a cure of the condition, and, therefore, it should never be delayed.

DYSENTERY IN THE MEDITERRANEAN.

The following are extracts from a highly interesting letter written by Major ————, Australian Army Medical Corps, during the period when he was stationed with the 3rd General Hospital at Lemnos:—

I think if I was asked what has struck me most about this place so far, I should say first the beauty of the island and its mild, healthy atmosphere, and secondly, the fearful lack of sanitation, which has caused such a naturally salubrious place to become a very hotbed of disease.

To begin with, the powers that be brought a crowd of cheap black labour, Egyptians, to clear the ground for hospital sites. As a matter of fact, these most degraded of creatures defæcated around every well, along the seashore, or on any spot that the desire took them. In consequence, when we landed we found the whole area thoroughly polluted and a plague of flies, such as I had never imagined possible. Within a few days bowel troubles made their appearance among the unit, and they have continued ever since. The pollution of the ground continues still, as the sanitary force is not numerous enough to prevent it. Wherever a drain or trench is dug, Egyptians and British Tommies proceed to use it as a latrine, and so the sickness and the flies continue. Fortunately, we are now getting cooler weather, and fly-borne diseases are consequently diminishing. . . . .

When I went to England I went through France, to have a look at the military hospitals, so as to get an idea of what equipment to buy with the specially donated funds. I never saw such sepsis before; hardly any wounds seemed to run an aseptic course. At the American Hospital, in Paris, where the best work I have seen yet in a military hospital was being carried out, I saw two post-mortem examinations on cases of gas gangrene done in one day.

Consequently, I came here with apparatus for anaerobic work, and I am pleased to say that there has been no use for it. The wounds have run an entirely different course. If they are kept moderately clean and are not interfered with, they usually heal by first intention. I think that there are more bullet wounds among our cases here. The troops are not working in the septic ground which abounds in Flanders and France, where the soil is so intensely manured.

We have had a great quantity of bowel diseases. The hospital has become really a big medical hospital, and the surgeons have degraded or elevated themselves to become physicians. For the first month or so we had many cases of amœbic dysentery, which, of course, was new to most of us. I had many stools to examine, and about a third of them contained amœbæ, the rest being mainly enteritis stools. Most of the cases get well under treatment with emetine or ipecacuanha. I have been called on to examine six patients *post-mortem* who had wasted to skeletons from this complaint. I suppose you are bound to meet with some of these cases among the returned soldiers, so perhaps you will pardon my writing at a little length on what I have observed concerning them.

There seems to be nothing characteristic about the onset. Some patients complain of attacks of moderately severe abdominal pain, with frequent loose motions, alternating with periods of normality, though all the time the general condition is one of slowly increasing anæmia and weakness, with loss of weight.

The onset in the acute cases may be just like acute bacillary dysentery, though there is usually less febrile reaction. The stools consist of mucus, pus and blood in the early stages, and later become diarrhœal, and blood-tinged only. At one stage the motion may resemble blood-tinged muco-purulent sputum. In fact, one stool sent to us in a sputum cup, with no label, was actually examined for pneumococci and tubercle bacilli. Mistakes are inevitable if an attempt is made to distinguish between amœbic and bacillary dysentery on the naked eye appearance of a bloody mucus stool. In the former, the stool is usually like muco-purulent blood-stained spit, and, in the latter, the mucus is much stiffer, in larger pieces, often stained green, and has a peculiarly disgusting smell of spermin.

The amœbic stool, which I might most nearly describe as characteristic, and from which I have had most luck in getting amœbæ, is a liquid stool resembling foul empyema fluid.

In cases which have been treated by emetine, the parasites either die out or encyst. The cysts are highly refractile, and can be readily picked out on this account by the lower power of the microscope. In this stage there are two or four nuclei; never more. To demonstrate them properly, Schaudinn's method is the best. I might mention two fallacies in connexion with the recognition of these cysts. First they may be mistaken for cysts of harmless *entamoeba coli*, which, however, has eight or more nuclei. Many of our men, who have been in Egypt, have acquired this parasite, but, generally, if amœbic cysts are found in a dysentery stool, the cysts are those of *amoeba histolytica* or *tetragena*. The second fallacy is that in cases of bacillary dysentery the stool contains large cyst-like bodies, often containing red blood corpuscles and chromatin, and looking very like encysted entamœbæ, except that they do not have the strongly refracting cyst wall. They are probably plasmolysed large macrophage inflammatory cells, but they are very likely to be mistaken for amœbic. I have no doubt that some of my cases were misdiagnosed in this way. Other considerations soon put one right or aroused one's suspicion if the mistake is made.

Other clinical signs are the enlargement and tenderness of the liver, which is very frequent in the acute cases, and the tenderness and thickening felt along the colon, particularly over the caecum and sigmoid.

I cannot speak with the same degree of authority on treatment. Emetine, given hypodermically once a day in one grain doses, effects rapid improvement. If it does not, there is reason to suspect that the case is amœbic and not bacillary. Ipecacuanha, given in large doses at night or covered with salol, is useful to follow up for its local poisonous effect on the parasites.

Bismuth I am sure is bad. I have seen a solid stool *post-mortem* in an amœbic gut, which must effectively have prevented any local action on the ulcers, if it did not actually do harm by its mechanical action on rubbing on the ulcerated surface.

The *post-mortem* appearances are striking. The most noteworthy feature, I think, is the fact that the pathological process never extends above the ileo-caecal valve. In the bacillary cases, the inflammatory process seems invariably to extend upwards into the lower ileum.

I have seen but one case of marked hepatitis, with small abscesses, and that was in a patient who had had the disease for about two months or more. Hurley told me he had recently seen a case of large amœbic liver abscess in Egypt, about three months after the dysentery, so I suppose you people at home will be getting a few cases among returned invalids. There will presumably still be work for the surgeon when the war is over.

The amœbic dysentery has gradually been disappearing, but about three weeks ago there was a sudden increase in these cases, and the victims often died within a few days of onset. The *post-mortem* appearances were those of a most intense necrotic inflammation of the entire mucosa of the colon, and a considerable portion of the ileum, quite distinct from the findings in amœbic dysentery, where the mucosa is normal in between the ulcerated areas. Bacteriologically, we have isolated Shiga's bacillus from many of the cases, and the Flexner bacillus only once. The epidemic seems to have abated since we had a snap of cold weather, and, consequently, a diminution in the fly pest. For the severely toxic cases the only hope seems to be early and, if possible intravenous, injections of anti-dysenteric serum. Fortunately, we brought some Lister Institute polyvalent antiserum, and its effect was as remarkable as that of anti-diphtheria serum in a laryngeal diphtheria. Many of our patients came in about fourteen days after onset of symptoms, and the serum was of doubtful value, as the toxins of the bacillus had probably done irreparable damage to the tissue cells by that time.

Many patients get over their early difficulties, and die a fortnight or two later from exhaustion, though the bowel is seen after death to be in a healing condition. Presumably, the toxic degeneration of the viscera, such as the heart muscle and liver, is a progressive one, analogous to

the late effects of phosphorus poisoning. While the epidemic was at its worst, I examined as many as five bodies in four hours.

Another complaint, the *post-mortem* appearances of which were new to me, was scurvy, which has occurred to a slight extent among our troops, but which is very common in Turkish prisoners. I have performed autopsies in six of these cases, and have found every appearance, such as Osler describes in his admirable short article. Lime juice does not cure them; the scraped outer portion of raw potato seems more efficacious.

Speaking of dietetic troubles reminds me that I have seen two cases of the wet form of beri-beri, and possibly one case of the dry form, or nervous type. I believe that many of the cases of non-albuminous œdema I hear of are wet beri-beri cases. This might be expected from the diet we have been living on ever since we came here.

We were up against an interesting problem in the way of typhoid fever. Many previously inoculated patients came in suffering from what appeared to be either modified or real enteric fever, and the only way to decide was to try comparative agglutination of the patients' serum against formalinized emulsions of typhoid, paratyphoid A and paratyphoid B bacilli.

I used the macroscopic method, employing dilutions of 1: 100, 1: 200, 1: 400, and 1: 800. We found that cases of real typhoid were rare, but that the majority of the cases diagnosed as enteric fever turned out to be infections with paratyphosus A or B. It is lengthy business, but the results are most interesting, and if I can find time to write them up I think they will be worth publishing.

Blood cultures have also been of help, but are too tedious for the amount of work we have to get through.

We found quite a large proportion of paratyphoid A infections. As far as I can remember, paratyphoid B is the common one in Australia.

You know, of course, that C. J. Martin is attached to us. He is a most delightful companion, and a most stimulating man to work with, and he has been of invaluable assistance to the unit as a whole, and to me in particular.

Public Health.

THE HEALTH OF NEW SOUTH WALES.

The following notifications have been received by the Department of Public Health, New South Wales, during the week ending February 19, 1916:—

	Metropolitan Combined Districts.		Hunter River Combined Districts.		Remainder of State.		Total.	
	Cs.	Dths.	Cs.	Dths.	Cs.	Dths.	Cs.	Dths.
Enteric Fever	20	—	3	1	—	3	76	4
Scarlet Fever	55	—	4	—	—	—	126	—
Diphtheria	75	—	4	—	—	5	156	5
C'bro-Sp'l Menin.	1	—	—	—	—	—	1	—
Inf'ntile Paralysis	4	—	—	—	—	—	4	—
Pul. Tuberculosis	31	4	2	—	—	—	33	5
Malaria	4	—	—	—	—	—	4	—

THE HEALTH OF VICTORIA.

The following notifications have been received by the Department of Public Health, Victoria, during the week ending February 20, 1916:—

	Metropolitan.		Rest of State.		Total.	
	Cs.	Dths.	Cs.	Dths.	Cs.	Dths.
Diphtheria	35	2	42	1	77	3
Scarlatina	14	1	9	0	23	1
Enteric Fever	5	1	33	2	38	3
Pulmonary Tuberculosis	24	6	11	5	35	11

The following is the return of cerebro-spinal meningitis cases notified to the Board during the week ending February 20, 1916:—

	Metropolitan Area. Cases.	Rural Districts. Cases.	Totals. Cases.
Civil	5	—	5

INFECTIVE DISEASES IN WESTERN AUSTRALIA.

The following notifications have been received by the Department of Public Health, Western Australia, during the week ending February 12, 1916:—

District.	Enteric Fever. Cases.	Diphtheria. Cases.	Pulmonary Tuberculosis. Cases.	Erysipelas. Cases.	Septicæmia. Cases.	Anterior-Poliomyelitis. Cases.
Fremantle	—	1	1	—	—	—
Claremont	1	—	1	—	—	—
Subiaco	—	1	—	—	—	—
Perth	4	3	1	—	—	—
Maylands	1	1	—	—	—	—
Mid. Junct.	—	—	1	1	—	1
Victoria Pk.	—	3	—	—	—	—
Kalgoorlie	—	6	1	—	—	—
Boulder	—	—	1	—	1	—
Meenaar	1	—	—	—	—	—
Burswood	2	—	—	—	—	—
Doodlakine	1	—	—	—	—	—
Dowerin	—	1	—	—	—	—
Quind'nning	—	1	—	—	—	—
York	—	—	1	—	—	—
South'n Cr.	—	—	1	—	—	—
Narrogin	—	—	1	—	—	—
Ch'dl'w's W.	—	1	—	—	—	—
Albany	1	—	—	—	—	—
Greenbush's	1	—	—	—	—	—
Totals	12	18	9	1	1	1

SMALL-POX IN NEW SOUTH WALES.

The following notifications have been received by the Department of Public Health, New South Wales, during the week ending February 27, 1916:—

Disease.	No. of Cases.
Sigleton (infected at Newcastle)	1
Newcastle	1
Total	2

HEALTH OF SYDNEY.

The mortality return for January, as supplied by the Government Statistician, shows that 695 deaths occurred in the metropolis of Sydney, including 39 deaths of individuals previously resident outside the metropolis, and deaths classified as taking place in the islands and shipping in the harbour.

Thus calculated on an estimated population of 763,000, the annual death-rate for the month works out at 10.93 per 1,000 of the population.

Deducting the deaths of persons non-resident of the metropolis in the Mental Hospitals of Leichhardt and Hunter's Hill (Callan Park and Gladesville), and adding the deaths of persons residents of the metropolis occurring at the Benevolent Asylums, Mental Hospitals, and Consumptive Sanatoria situated outside the metropolis, the number of deaths was 670, giving a corrected death-rate of 10.53 per 1,000.

Among children under 1 year of age, 155 deaths were recorded for the metropolis.

There were 1778 births during the month, giving a rate of 27.96 per 1,000 of the population, which is only slightly below the average for January of the previous five years. The infantile mortality rate was 88 per 1,000 births, which, although below that of the previous month, yet still exceeded the average for January of the previous five years by 13%.

Infectious diseases were responsible for 62 deaths, of which 6 were due to measles, 6 to scarlet fever, 4 to whooping cough, 12 to diphtheria, 15 to typhoid fever, 7 to cerebro-spinal fever, 2 to erysipelas, and 10 to puerperal fever. Diarrhœal diseases were credited with 98 deaths, cerebral hæmorrhage caused 26 deaths, phthisis 54, cancer 47, diseases of the heart and blood vessels 80, pneumonia 40, and Bright's disease 80 deaths.

Compared with the average for January of the previous five years, there were increases in the number of deaths

from epidemic diseases, pulmonary diseases and diarrhœal diseases, with decreases in phthisis, Bright's diseases, cancer, diseases of the heart and senility.

Two hundred and eighty five cases of scarlet fever, 289 of diphtheria, 68 of typhoid fever, 33 of anterior polio-myelitis, 3 of cerebro-spinal meningitis, 9 of malaria, and 111 of pulmonary tuberculosis, were notified during the month of January.

Twenty cases of phthisis (consumption of the lungs and consumption of the throat) were notified under the City Council's bylaws, and 15 premises were disinfected by the Council's trained staff after the deaths or removal of the patients.

(Signed) F. M. SUCKLING,
Acting Medical Officer of Health.

FRUIT AND VEGETABLES FOR INVALIDED SOLDIERS.

The Red Cross Society has recently associated itself with a movement which has been in operation for several months to supply fruit, vegetables, etc., to the returned wounded soldiers and to the relatives of soldiers. It should be remembered that a considerable number of our brave Australian soldiers are married men with large families. Australia prides herself on having undertaken to see that her sons, who have fought and have suffered in her cause, shall not want when they return. In order to honour this undertaking, each member of the community should contribute something. The Red Cross Society has recognized that a well-directed appeal to the individual members of the community will enable them to supply certain necessaries of life which have become, within recent times, more and more costly.

The Honorary Organizer, Mr. R. M. Pontey, has charge of the depôts for the reception of fruit and vegetables. These depôts are situated at 24 Ash Street and 18 Barrack Street, Sydney. Everyone is asked to send some fruit or vegetables, preferably grown in his own garden, in order that the Red Cross Society may discharge the debt of the populace to those soldiers who have suffered in the war. Packages are carried free by rail provided they are addressed to the depôt and clearly marked "For the Red Cross Society."

Medical Matters in Parliament.

VICTORIA.

Sir Alexander Peacock moved in the Legislative Assembly on November 24, 1915, for leave to introduce a Bill to amend the Health Act and for other purposes. The motion was agreed to, and the Bill brought in and read a first time. On December 1, 1915, Mr. McLeod, Minister of Health, moved the second reading of the Bill. He stated that the object of the Bill was to enable the Department of Health to act promptly and effectually in cases of emergency. The Medical Conference, which had considered the epidemic of cerebro-spinal meningitis, had recommended 47 new clauses for insertion into the Health Act. This Bill only dealt with some of these proposals. The Bill conferred few new powers, but it provided means for more rapidly putting into effect the powers of the Principal Act. It must be remembered that returning soldiers might bring serious epidemic disease into the State. The new powers under the Bill would provide for the regulation of contacts and carriers, and for the destruction of animals which might transmit disease to man. The Bill provided that the Board of Health might supersede all councils, and take over all matters of health. Another section provided that the Minister might supersede both the Board of Health and Municipal Councils, and himself take control. The Minister might, in cases of emergency, give the Chairman of the Board of Health power to exercise all the functions of the Act. Power was given to a Court of Petty Sessions to grant to the Board the right to carry out the work of any council at the expense of the council. Dealing with the Bill in detail the Minister said that clause 2 gave the Board power to prescribe the conditions under which traffic through or to any streets might be allowed, and to prevent the entrance of persons into streets or houses. In section (*b*) of the same clause the Board was allowed to prescribe the conditions under which contacts and carriers might be isolated and required to submit for treatment. Paragraph (*c*) provided for regulations concerning the character of the examination of persons who might be suffering from infectious and contagious diseases. Paragraph (*d*) set forth that the Board might make regulations requiring contacts and carriers to report themselves and to submit to medical examination at such times and places as might be specified. Paragraph (*e*) permitted the formulation of regulations for the destruction of any animal suffering or suspected to be suffering from any disease transmissable to man, and for the destruction of insects which are carriers of disease. Subclause 2 of clause 2 amended the Principal Act so as to allow councils to provide food, clothing and other necessities for the treatment of persons suffering from infectious diseases. Under the Principal Act medicines only could be provided by the councils. It would also allow councils to supply disinfectants, and antitoxins without being liable to actions for the misdirection of funds. Subclause 3 stated that for the purposes of the Health Act a carrier should be deemed to be suffering from a dangerous, infectious or contagious disease. The next section defined a carrier as any person having in his nose or throat or in his excretions germs of any dangerous infectious disease although presenting no signs of the disease. A contact was defined as any person who, within the previous 21 days had been in contact with or close proximity to a person suffering from an infectious disease, or who had been in any place or house where there had been during the previous 21 days a person suffering from an infectious disease. Clause 3 gives the Board power to execute things directed by regulations to be performed by councils and to recover the cost at a Court of Petty Sessions. Clause 5 allowed any place to be declared infected on the certificate of two medical men. The Mayor or the President of a shire was given power in cases of emergency to isolate houses without calling the council together. Clause 6 gave the Minister power to authorize the President of the Board of Health to exercise the powers conferred by the Act. The Minister was to be sole judge that such an emergency had arisen as would require the exercise of these powers. There were two clauses in the Bill to deal with the pure foods law. These clauses provided that articles of food in packages must be labelled as to weight, volume, quality, country of origin, and name of manufacturer.

Mr. Elmslie thought that the Bill should compel medical men to notify infectious diseases. He had no objection to the exercise of very wide powers by the Minister or by the Chairman of the Board of Health. He had not much faith that the powers that they wished to confer would be exercised in the way that they desired by the Board of Health. It seemed to him that an imperative amendment in their health laws was in the direction of reconstituting the Board of Health. The constitution of the Board and the method of election wanted radical alteration. The members were not elected on account of special knowledge or of fitness for their duties.

Mr. Hogan discussed the practice of selling jams in tins containing 13 and 27 ounces, while such tins were commonly described as 1 and 2 pounds tins.

Mr. Rouget said that the weight was marked on the tins, and suggested that the public demanded these quantities, as they bought the tins at a slightly lower price.

Messrs. Billson, Menzies, Hannah, and Toutcher, having supported the Bill, the motion was carried, and the Bill read a second time.

In Committee the chief discussion occurred on clause 7, which dealt with the labelling of articles of food in packages. Mr. McLachlan endeavoured to reduce the strength of all alcoholic beverages. After discussion the Chairman ruled that the amendment went beyond the scope of the Bill. Mr. Hogan wished that food should only be put up in packages of standard weight or of simple multiples of standard. He suggested also 1 lb. as the minimal weight. It was pointed out that the Foods Standard Committee, who had considered this proposal, had found that there were 12 articles that should be sold in packages of less than 1 lb. Such substances as pepper, mustard and spice were men-

tioned as examples. After a long and interesting discussion the amendment was withdrawn. The Bill passed through Committee with small verbal amendments. It was immediately read a third time and forwarded to the Council.

The same day the Bill was read a first time in the Legislative Council. On December 16, 1915, the Hon. F. Hagelthorn moved the second reading in the Legislative Council.

The Hon. J. P. Jones regretted that the Government had not introduced the Health Bill which had been promised to the House. He felt that they must give more powers to the Department of Health. The conservative idea that questions of health had to do with each individual still existed. The control of epidemics was a question for the whole of the State. More attention should be given to the dissemination of information about infectious diseases. This could be readily done by distributing circulars in schools. The circulars were carried into the homes and studied. He thought that attention should be paid to personal cleanliness. He frequently met with patients who did not take baths. In the Greenvale sanitorium for consumptives, under the control of the State, the patients were provided with a shower bath once a fortnight. He hoped that greater efforts would be made to promote education in hygiene. He trusted that the question of venereal diseases would soon receive attention.

Other members having supported the Bill the second reading was carried.

In Committee the Hon. R. Beckett moved an amendment to clause 5 to insert the words "in writing" in the authorization to the President of the Board of Health by the Minister to do certain things in cases of emergency. The amendment was agreed to. The Hon. R. Beckett also moved a new clause to insert in section 178 of the Principal Act after the word "district" the words "if the patient removes to a district under the control of another council the medical practitioner continuing in charge of the case shall report the case to such other council." The new clause was agreed to. The Bill was reported with amendments, and the report adopted. On the motion of the Hon. F. Hagelthorn the Bill was read a third time.

On December 17, 1915, the Bill was returned to the Legislative Assembly with a message that the Council agreed to the Bill with amendments. These amendments were considered by the Assembly on December 21, 1915. Mr. McLeod, Chief Secretary, moved that the formal amendments be agreed with. The motion was carried. He then moved that the Assembly should disagree with the amendment, which imposed additional obligations upon medical men, and which might involve medical practitioners in fines and penalties. The amendment was disagreed with. A message was sent to the Council intimating the decision of the Assembly.

On the same day the Bill was received by the Legislative Council. The Hon. F. Hagelthorn said that the officers of the Health Department did not regard the provision in the new clause as practicable at that stage. He moved that the Council do not insist on their amendment.

The Hon. R. Beckett said that he would not endanger the Bill by pressing the amendment. He trusted that the amendment would be included in future legislation.

The amendment was not insisted on.

The Bill received the Royal Assent on December 30, 1915. The Act reads as follows:—

Be it enacted by the King's Most Excellent Majesty by and with the advice and consent of the Legislative Council and the Legislative Assembly of Victoria in this present Parliament assembled and by the authority of the same as follows (that is to say):—

1. This Act may be cited as the Health Act, 1915 (No. 2) and shall be read and construed as one with the Health Act 1915 (hereinafter called the Principal Act) which Act and this Act may be cited together as the Health Acts.

2. (1) To the purposes for which regulations may be made by the Board under section one hundred and seventy-three of the Principal Act as amended by this Act there shall be added the following:—

(*a*) Prescribing the conditions under which traffic into or through any streets thoroughfares or places specified by the Board under the provisions of section one hundred and seventy-six of the Principal Act may be stopped or ingress egress or regress of any persons to or from any houses tenements or premises within any such streets thoroughfares or places may be limited or prevented and the preventive measures (including the disinfection of houses tenements or premises and their contents) to be adopted by councils and by persons in relation to any such streets thoroughfares places houses tenements or premises and to any persons residing or being therein whether temporarily or otherwise (including the disinfection as prescribed of contacts):

(*b*) Prescribing the conditions and circumstances under which carriers or contacts may be isolated or required to submit to such treatment as may be specified by an officer of the Department of Public Health who is a medical practitioner or by an officer of health of a council:

(*c*) Prescribing the clinical chemical bacteriological and other examinations necessary to ascertain whether any person is suffering from a dangerous infectious or contagious disease and whether any person who has been suffering from any such disease has ceased to be liable to convey infection:

(*d*) Requiring carriers or contacts to report themselves and submit themselves to medical examination at such times and places as are specified by an officer of the Department of Public Health who is a medical practitioner or by an officer of health of a council; and

(*e*) Providing for the destruction of animals suffering from any disease liable to be transmitted to man or of animals (including insects) suspected of suffering from any such disease or liable to convey any such disease to man.

(2) Section one hundred and seventy-three of the Principal Act is hereby amended as follows:—

For the words "for the dispensing of medicines" there shall be substituted the words "for the supply of medicines and other substances for prevention or cure"; and for the words "such medical aid" there shall be substituted the words "such medical or other aid."

(3) For the purposes of the Health Act a carrier shall be deemed to be suffering from a dangerous infectious or contagious disease.

(4) In the construction of this section unless inconsistent with the context or subject-matter—

"Carrier" means any person having in his nose or throat or in his excretions or discharges germs of any dangerous infectious or contagious disease although presenting no signs or symptoms of disease:

"Contact" means any person who within the previous twenty-one days has been in contact with or in close proximity to a person suffering from a dangerous infectious or contagious disease or who has been in any place specified under the provisions of section one hundred and seventy-six of the Principal Act or in any house tenement or premises where there has been within the previous twenty-one days a person suffering from a dangerous infectious or contagious disease:

"Prescribed" means prescribed by regulations made under this section.

3. In the event of any council or its officers refusing or neglecting to comply with the requirements or directions of any of the regulations made by the Board under section one hundred and seventy-three of the Principal Act as amended by this Act the Board may execute any works matters or things which the said council or any such officer is so required or directed to do and may recover the costs and expenses thereof from such council in a court of petty sessions as a civil debt recoverable summarily or in any court of competent jurisdiction.

4. (1) In section one hundred and seventy-seven of the Principal Act after the word "council" (where it occurs for

the second time) there shall be inserted the words "or of any two medical practitioners."

(2) For the purpose of the said section one hundred and seventy-seven the expression "house" or "building" shall be deemed to include any vessel lying in Victorian waters.

(3) The powers conferred by section one hundred and seventy-seven of the Principal Act as amended by this Act upon the Board or a council may be exercised by the chairman of the Board or the mayor or president of the council in any case of emergency or sudden necessity of the existence of which emergency or necessity the said chairman or (as the case may be) the said mayor or president shall be the sole and final judge.

5. In any case of emergency or sudden necessity, of the existence of which emergency or necessity the Minister shall be the sole and final judge, the chairman of the Board for the purpose of more effectually checking or preventing the spread of any dangerous infectious or contagious disease may, if authorized in writing by the Minister, from time to time and for such time as the Minister thinks fit, exercise the following special powers within or with respect to any district or any part thereof:—

(1) He may declare any land building or thing to be insanitary, and may forbid any insanitary building to be used or occupied for any purpose:

(2) He may cause any insanitary building to be pulled down and the timber and other materials thereof to be destroyed or otherwise disposed of as he thinks fit;

(3) He may cause insanitary or infected things to be destroyed or otherwise disposed of as he thinks fit:

(4) He may cause animals (including insects) infected or suspected of being or liable to be infected or to convey infection to be destroyed in such manner as he thinks fit:

(5) He may require persons to report themselves or submit themselves for medical examination at specified times and places:

(6) He may order persons places houses premises, buildings ships animals and things to be isolated or disinfected as he thinks fit:

(7) He may forbid persons ships animals or things to come or be brought to any port or place in a district from any port or place which is or is supposed to be infected with any dangerous infectious or contagious disease:

(8) He may forbid persons to leave the district or the place in which they are isolated until they have been medically examined and found to be free from dangerous infectious or contagious disease and may enforce the return of any person who unlawfully leaves such district or place:

(9) He may regulate the control and direction of ships from infected ports or places while such ships are in Victorian waters and the discharge and the treatment of the cargo thereof:

(10) He may cause vessels and ships to be fumigated and may require or undertake the destruction of rats in vessels and ships:

(11) He may forbid the removal of animals or things from any district or part thereof to another or from the place where they are isolated:

(12) He may cause places houses building animals and things to be inspected and examined:

(13) He may order owners and occupiers to destroy all rodents on their premises:

(14) He may require water-courses and the sources of water supply to be purified:

(15) He may forbid the discharge of any sewage or drainage or any matter of any description detrimental or likely to become detrimental to health into any water course stream lake or source of water supply.

(16) He may require the effectual cleansing of streets and public ways and places by those intrusted by law with the care and management thereof:

(17) He may with the approval of the Minister use as a temporary site for a special hospital or place of isolation any reserve or endowment suitable for the purpose, notwithstanding that such use may conflict with any trusts enactment or condition affecting the reserve or endowment; and

(18) He may exercise any other power conferred upon him by the Governor in Council for the purpose of more effectually carrying out the provisions of the Health Acts.

In the event of any council person or body of persons or in the case of a ship the owner thereof or agent therefor refusing or neglecting to comply with any of the orders prohibitions or requirements of the said chairman under paragraphs (10) (13) (14) (15) or (16) of this section, the said chairman may cause any works matters or things ordered or required to be done by or under any such order prohibition or requirement to be executed and all expenses incurred in such execution may with costs be recovered from such council person or body of persons or such owner or agent by the said chairman in a court of petty sessions as a civil debt recoverable summarily or in any court of competent jurisdiction.

6. For section fifty-nine of the Principal Act there shall be substituted the following section:—

"59. (1) Except in the case of any package of any article of food which has been exempted from any or all of the provisions of this section by regulations made on the recommendation of the Food Standards Committee there shall be legibly and durably printed stencilled impressed or marked on or attached to every package of any article of food packed or enclosed for sale a label or tag or statement indicating—

(*a*) the trade name or description of such article;

(*b*) the net weight or number or true measure or volume of the contents of such package;

(*c*) the name and address of the vendor or maker thereof or agent therefor or of the owner of rights of manufacture thereof;

(*d*) the place of manufacture or country of origin of such article;

(*e*) whether the contents of the package are compounded imitated mixed or blended;

(*f*) whether in such article any substance used in the preservation thereof is present and if so the nature and quantity or proportion of such substance; and

(*g*) whether any colouring or flavouring is present in such article, and if so the nature of such colouring or flavouring,

and no person shall sell in a package any article of food unless such a label or tag or statement is printed stencilled impressed or attached to or marked on such package as required by this section.

(2) All the particulars required by the Health Acts or by any regulations thereunder shall be printed on a portion of the label which shall be directly attached to the package and shall be in a position equally prominent with that of the name of the article of food and the name of the vendor or manufacturer thereof or the agent therefor or of the owner of the rights of manufacture thereof.

(3) The particulars required by the said Acts or regulations shall appear together in letters of such size and kind and in such colours or with such contrasts of colour as are prescribed by regulations under the said Acts.

(4) In the case of any liquors paying Excise or Customs duty the measures set forth in any Act dealing with such liquors shall be held to satisfy the requirements of this section in regard to measure or volume.

(5) Approximate weights and measures may be allowed by the Board in the case of such articles of food as are recommended by the Food Standards Committee.

(6) The Food Standards Committee may prescribe by regulations under Part IV. of this Act—

(*a*) that any package of any article of food specified by such regulations shall contain a specified weight or number or true measure or volume of the contents thereof; and

(*b*) that any package containing any drug specified by such regulations or any compound or mixture con-

taining any such specified drug shall bear a label indicating—

(i.) the name of the drug and the quantity or proportion thereof in any such package or compound or mixture; and

(ii.) the name and address of the vendor or maker of such drug or compound or mixture or of the agent therefor or of the owner of the rights of manufacture thereof."

7. (1) In sub-section (1) of section one hundred and sixteen of the Principal Act after the words "under the Health Acts" there shall be inserted the following words:—

"prescribing the form or kind of label to be attached to any article of food or drug or other article substance compound or mixture or to the package containing the same; and requiring and prohibiting the use in the inscription on the label so attached of such particulars directions statements information or words as are specified."

(2) In sub-section (2) of the said section one hundred and sixteen the words beginning with "requiring labels" and ending with "words that may be specified" are hereby repealed.

University Intelligence.

ADELAIDE UNIVERSITY.

Dr. H. Swift, Senior Physician, at the Adelaide Hospital, has been appointed Lecturer in Medicine in the place of Dr. J. C. Verco, who has recently resigned. In consequence of this apopintment, Dr. Swift has resigned his Lectureship in Clinical Medicine, which he has held for some years. Dr. F S. Hone has been appointed in his place.

Professor Watson has returned from Egypt, and will resume his duties as Professor of Anatomy at the commencement of the University term.

Dr. A. M. Cudmore, who was recently invalided home from the No. 3 Australian General Hospital, has resumed his duties as Lecturer on Clinical Surgery.

Obituary.

KENNETH MAXWELL.

By the death of Dr. Kenneth Maxwell, on 18th February, 1916, at the early age of fifty years, the district of Castlemaine has lost the services of a highly-esteemed, capable and conscientious practitioner. He was born in Hobart, and was one of a large family of boys, three of whom eventually qualified in medicine. After completing his preliminary education at Hobart, he proceeded to Edinburgh University, where he graduated in 1888. From there he went on to Oxford and London for hospital and special experience. On his return he was appointed at first junior and subsequently senior house surgeon at the Hobart Hospital. In 1897 he settled in Castlemaine, in succession to Dr. Hutton and the late Dr. G. More Reid, where, by his ability, uprightness, courtesy and kindness he built up a very large general practice. He was for many years an Honorary Surgeon of the Castlemaine Hospital, and Physician to the Benevolent Asylum. In spite of a somewhat retiring disposition, and although the demands of his practice on his time always claimed first attention, he took a considerable part in the social and semi-public life of his town. He was a good business man, directing for many years the affairs of the Castlemaine Gas Company, of which he was Chairman of Directors. His shrewdness and judgement were much valued by the other members of the various committees on which he served from time to time.

In his earlier days he was a good, all round sportsman, and for several years he held the tennis championship of the district. In his last illness he showed the greatest courage and fortitude. He recognized from the first the hopelessness of his own case, but in spite of this, and of the fact that he suffered considerably from pain, he always had a smile and a cheery greeting for those who came in contact with him. He leaves a widow and a son, who is still at school.

JOHN SMALL.

It is with deep regret that we have to record the death of Dr. John Small, of Geelong, Victoria. Dr. Small was a man of sterling character, a straightforward, manly opponent to those who differed from him in professional and municipal matters; a man whose popularity was due to his efficiency as a medical practitioner, to his earnestness as a sociologist, and to his excellence as a man. The enormous gathering at his funeral, consisting of crowds of patients, who did not restrain their expressions of grief, the solemnity of the military music, and the mournful strain of the Highland piper playing "The Land of the Leal," and the "Last Post," resounding over his coffin testified to his popularity as a soldier and to the affection and appreciation his life's work had earned for him.

John Small was born in Fifeshire, Scotland, on October 1, 1859. He studied medicine in Edinburgh, and passed the examination for the diplomas of the Royal College of Physicians and Surgeons of Edinburgh, and the Royal College of Physicians of Glasgow, in 1883. After qualifying he came to Australia as Medical Officer in an emigrant ship, and settled in Queensland, where he acted as assistant to Dr. Ryan at Gympie until 1885. He then bought the practice of the late Dr. Wyer, in Geelong, Victoria. He was appointed to a vacancy on the staff of the Geelong Hospital, a position which he held until he retired from practice six years ago. In 1893, when in Scotland, he took the Fellowship of the Royal College of Surgeons of Edinburgh.

Shortly after settling in Geelong he married the daughter of Major Hall, of Bath, England. He was a Captain in the Garrison Artillery Medical Staff. He took a keen interest in municipal affairs, and served as a member of the Geelong City Council and of the Geelong Sewerage Trust. He was President of a Hibernian society for several years, and took a keen interest in Scottish affairs. In March, 1910, he retired from practice on account of failing health. Since the outbreak of war he volunteered for service in the local camp, and in August, 1915, he was appointed Officer in Command, with the rank of Major.

THOMAS SERGEANT HALL.

Medical graduates of the University of Melbourne and all interested in the advancement of scientific knowledge in Australia will learn with regret of the death, on December 21, 1915, of Thomas Sergeant Hall, B.A., D.Sc., at the age of 57 years. He had been Lecturer in Biology in the University since 1893. Dr. Hall will be best remembered for his labours as local secretary in Victoria to the Australasian Association for the Advancement of Science, and for his useful "Catalogue of the Scientific and Technical Periodical Literature in the Libraries of Victoria." His contributions to geology were of much value, so that the Geological Society of London awarded him the balance of the Murchison Fund. An instructive biography by his colleague, Professor Baldwin Spencer, appeared in the *Victorian Naturalist* for January, 1916. Many medical graduates will miss the simple, unselfish scholar and scientist who impressed them with his honesty.

Personal.

Dr. M. H. Downey, who for many years was Assistant Medical Superintendent at the Mental Hospital, Parkside, South Australia, and who has been acting as Temporary Superintendent since Dr. Cleland's resignation, was recently appointed to the position of Medical Superintendent. He has now been called up for active service, and will have charge of the 13th Field Ambulance, which will shortly be formed. During his absence his duties will be performed by Dr. Lind, the present Assistant Superintendent. Dr. W. L. Cleland, the late Medical Superintendent, has patriotically left his retirement to help with the work, and Dr. B. H. Morris, the Inspector-General of Hospitals, will also assist.

Major John Corbin, who recently returned on furlough from No. 1 General Hospital, has left for Melbourne to take

charge of the newly-formed Field Ambulance, with the rank of Lieutenant-Colonel.

Our attention has been drawn to a somewhat anomalous position concerning a member of the New South Wales Branch of the British Medical Association. We refer to Dr. C. H. Seaforth, of Brewarrina. Dr. Seaforth is a New Zealand graduate, and practised until recently in New Zealand. His father's name was Schumacher, and, for obvious reasons, all the members of his family desire to get rid of this enemy name. We are informed that his father was a Danish subject, and was naturalized 45 years ago. The name of Schumacher was therefore changed, and that of Seaforth adopted. In the current issue of the New Zealand Medical Register, the entry appears under the name Schumacher, with the words "now Seaforth" in brackets. On his arrival in New South Wales it was necessary for him to register under his name of Schumacher, as that name appeared on his diploma. We are informed that a cross entry has been made under the name of Seaforth, but that it was not possible for this cross entry to appear in the Government *Gazette* issued in January of this year, in which the notice of his registration appears.

Proceedings of the Australasian Medical Boards.

NEW SOUTH WALES.

The following have been registered under the provisions of the "Medical Act, 1912, 1915," as duly qualified medical practitioners:—

Barriskill, John Robert, M.B., 1916, Univ. Sydney.
Bray, Charles Wynwood, M.B., 1916, Univ., Sydney.
Harrison, John Leslie, M.B., 1916, Univ. Sydney.
Leahy, Henry George, M.B., 1916, Univ. Sydney.
Rosenthal, Cecil Phillip, M.B., 1916, Univ. Sydney.
Sinclair, Callander Wade, M.B., M.S., 1916, Univ. Sydney.
Murphy, Peter James Benjamin, M.B., M.S., 1915, Univ. Sydney.

For additional registration:—

Kestevan, Hereward Leighton, M.S., 1916, Univ. Sydney.
Sinclair, George Wade, M.S., 1916, Univ. Sydney.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xvii.

Texas District Hospital, Queensland, Medical Officer.
Broken Hill and District Hospital, Resident Medical Officers.
Brisbane Hospital, Resident Medical Officer.
Hobart General Hospital, Junior House Surgeon.

Medical Appointments.

IMPORTANT NOTICE.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
WESTERN AUSTRALIA. (Hon. Sec., 230 St. George's Terrace, Perth.)	Swan District Medical Officer. All Contract Practice Appointments in Western Australia.
NEW SOUTH WALES. (Hon. Sec., 30-34 Elizabeth Street, Sydney.)	Department of Public Instruction—New Appointments as Medical Officer, Ophthalmic Surgeon, Ear, Nose and Throat Surgeon, Physician. Australian Natives' Association. Balmain United F.S. Dispensary. Canterbury United F.S. Dispensary. Goulburn F.S. Association. Leichhardt and Petersham Dispensary. M.U. Oddfellows' Med. Inst., Elizabeth Street, Sydney. Marrickville United F.S. Dispensary. N.S.W. Ambulance Association and Transport Brigade. North Sydney United F.S. People's Prudential Benefit Society. Phœnix Mutual Provident Society. F.S. Lodges at Casino. F.S. Lodges at Lithgow. F.S. Lodges at Mudgee (except A.H.C.G., M.U.I.O.O.F., U.A.O.D., and P.A.F.S.). F.S. Lodges at Orange. F.S. Lodges at Parramatta, Penrith, Auburn, and Lidcombe. Newcastle Collieries — Killingworth, Seaham Nos. 1 and 2, West Wallsend.
SOUTH AUSTRALIA. (Hon. Sec., 3 North Terrace, Adelaide.)	The F.S. Medical Assoc., Incorp., Adelaide.
QUEENSLAND. (Hon. Sec., B.M.A. Building, Adelaide Street, Brisbane.)	Brisbane United F.S. Institute. Croydon Hospital. Laidley Hospital, Medical Officer.
NEW ZEALAND: WELLINGTON DIVISION. Hon. Sec., Wellington.)	F.S. Lodges, Wellington, N.Z.

Diary for the Month.

Mar. 8.—South Sydney Med. Assoc. (N.S.W.), Annual.
Mar. 9.—Vic. Branch, B.M.A., Council.
Mar. 10.—South Aust. Branch, B.M.A., Council.
Mar. 15.—West. Aust. Branch, B.M.A., General.
Mar. 16.—N.S.W. Branch (Last day for Nomination of Candidates for Election of Council).
Mar. 21.—N.S.W. Branch, B.M.A., Executive and Finance Committee, Ethics Committee.
Mar. 24.—Q. Branch, B.M.A., Council.
Mar. 28.—N.S.W. Branch, B.M.A., Medical Politics Committee, Organization and Science Committee.
Mar. 29.—Vic. Branch, B.M.A., Council.
Mar. 30.—South Aust. Branch, B.M.A., Branch.
Mar. 30.—N.S.W. Branch (Return of Ballot Papers for Election of Council of Branch).
Mar. 31.—N.S.W. Branch, B.M.A., Annual Meeting.
Apr. 4.—N.S.W. Branch, B.M.A. (Quarterly.

EDITORIAL NOTICES.

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